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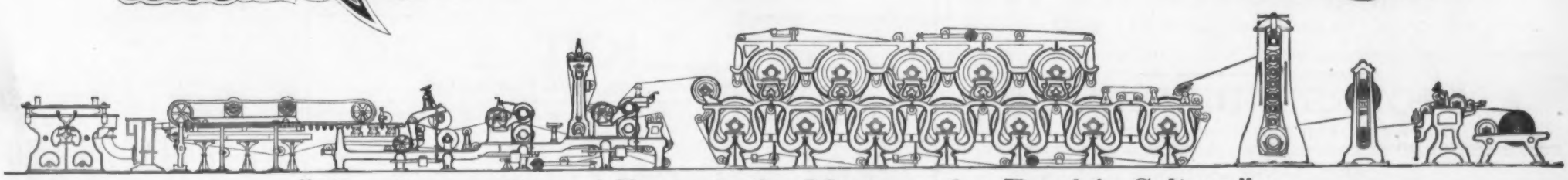


"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XXIV.—NO. 24. NEW YORK, JUNE 15, 1895. WHOLE NUMBER 1102.

Trade Topics.

Combustion in Boiler Furnaces.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By W. H. Weston.

Incomplete combustion or low temperatures in a boiler furnace and a loss of the heat units which the fuel contains or a part of them may be traced to three causes directly—viz.: 1. Incomplete diffusion of the air throughout the furnace, and the consequent incomplete contact of oxygen with the carbon and the hydrogen of the coal at a proper temperature. 2. Amount of air supplied to the furnace being too small. 3. Amount of air supplied to the furnace being too large.

In common practice all losses in the way of using fuel or firing are the result of one or more of these three conditions existing. Of course bad handling of a fire may be said to very often be the cause of a loss in fuel, but such loss is nevertheless directly brought about by one of the conditions just mentioned, for if the fire is kept too thin much of the time there will often be an excess of air flowing through the furnace, and the fire burning into holes or extra thin spots will allow streams of air to be concentrated at such parts, and the result is bad diffusion, and, if the fire is kept very thick, there is apt to be a poor diffusion, because the air is bound to find the channels through the mass of coal which allow of least resistance, and much of the gas reaches the chimney unconsumed. A thick fire being more apt to cake and clinker, this proper diffusion of the air is all the more likely not to be secured; and if the furnace doors are kept open much longer than is necessary in good practice an improper and excessive volume of air is admitted to the furnace.

When firing is done in such a way that the fires are heavy at one time and are then allowed to burn down thin before they are attended to, the loss of fuel will be caused by one of the three causes mentioned; that is, while the fire is thick the air supply may be deficient in quantity and badly diffused, and when the fire is thin the quantity may be excessive, the diffusion in this case being either good or imperfect, according to the circumstances.

Again, in some places, where there is a good fireman in attendance, but a poor draught is secured either by a low chimney or bad connections, there will be a loss of fuel, not because of poor firing, but because the air supply to the fuel and furnace and combustion chamber is imperfect in one of the three ways or in a combination of them. Thus it can be seen that, no matter what may be the external condition of working a fire, incomplete combustion and consequent loss of fuel value are caused by one of the three given conditions or a combination of them. Therefore all efforts toward the economical use of fuel in a boiler furnace should be directed toward obtaining an air supply in its proper relations.

In placing a fresh charge of coal on a fire there is a reduction of furnace temperature not only while the doors are open and an inrush of cold air is allowed; but after the doors are closed, the lowered temperature continues for a time because of the fresh fuel covering the incandescent coals, and absorbing heat from them, which brings it to a condition in which it distils off the gases, the heat thus absorbed being rendered latent. Next, if sufficient air to supply the necessary amount of oxygen is thoroughly diffused through the fuel and the fire-box and combustion chamber the carbon and hydrogen of the coal will unite with their relative quantities of oxygen provided the gases are at a sufficient temperature; but if a proper quantity of air is not supplied or its diffusion is incomplete, so that the carbon and hydrogen do not find their equivalents of oxygen, then of course they pass to the chimney unconsumed, or partly so.

In such a case they not only waste what heating power they contain, but they waste the heat taken from the previously fired coal to distil off the gases. Thus the quantities of coal gas distilled in a furnace, under common operation, are very irregular, and it is a hard matter to regulate a corresponding amount of air, as the volume of gases varies. The result is dense black smoke emitted from the stack at times. Yet this is not the only time when coal is wasted, for a loss may be going on when there is no dense smoke, for carbonic oxide is colorless and may be going to the atmosphere under certain conditions, and wasting a large per cent. of heat.

For instance, if a sufficient amount of oxygen is not secured the carbon of the fuel will so combine with it as to form carbonic oxide, or if the diffusion is not thorough much of the carbon will in this way find an insufficient quantity of oxygen, and thus in either way carbonic oxide will be formed, and this, being a sort of a half burned state of the carbon of the fuel, is of course a loss of fuel.

Then, again, there may be a waste of fuel on account of too large a quantity of air passing. In this case, although the carbon and hydrogen may find their equivalents of oxygen and give a high temperature on combining, the surplus amount of air supplied is heated on its passage through the furnace at the expense of heat which might otherwise have been given to the water through the heating surfaces of the boiler. Provided complete combination of the fuel products and the air is secured, the amount of air chemically necessary is, with all exactness required, 12 pounds per pound of coal; but, on account of the impossibility of securing complete diffusion and thorough mixing and bringing in contact, there must always be an excess of air supplied above the 12 pounds chemically necessary. This surplus quantity varies from about 5 to 12 pounds in ordinary furnaces of good construction and connection. The extra quantity depends on the nature of the draught, whether strong or slow, the shape and size of the furnace and combustion chamber, the area of grate, the way the fuel is fired, &c.

In a furnace, when the diffusion of the elements has been such that each atom of carbon and hydrogen has been brought in contact with its proper amounts of oxygen, there is a combination in the proportion by weight of 8 parts of oxygen to 1 of hydrogen forming steam, and 8 parts of oxygen to 3 of carbon forming carbonic acid gas, and by these combinations intense heat is produced.

The products of such combustion as they pass to the chimney and the atmosphere are: The steam, the carbonic acid gas, the nitrogen of that part of the gas from which the oxygen has been taken and the surplus unused air, these all passing to the air as colorless, incombustible gases.

When an insufficient quantity of air or an imperfect diffusion of air in a furnace is had, there will usually be a combination of oxygen and carbon in the proportion by weight of 8 parts of oxygen to 6 of carbon, forming carbonic oxide.

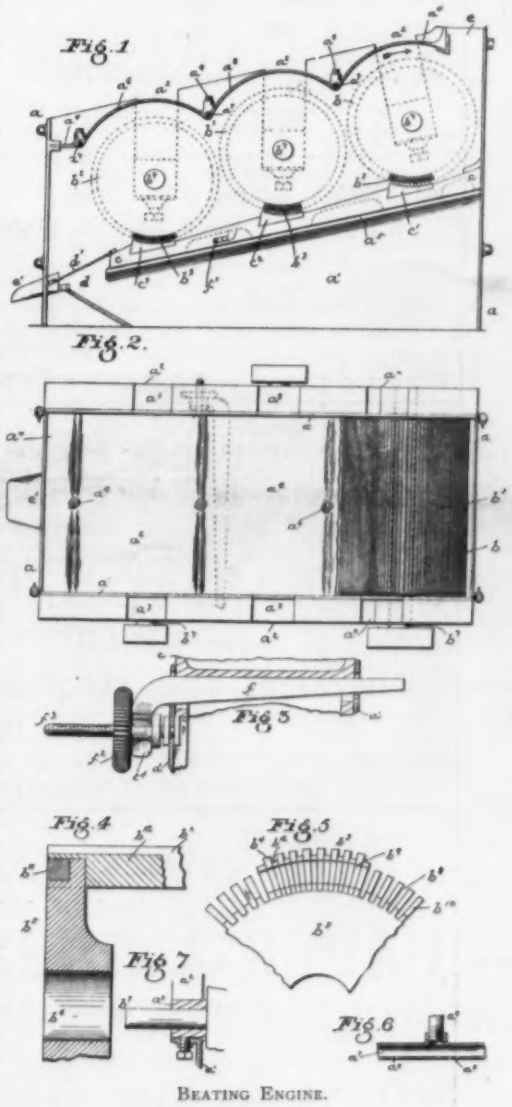
Another condition of combustion is when a part of the oxygen combines with the hydrogen to form steam, and a part of it with a part of the carbon to form carbonic acid, and part of the carbon, not finding its proportion of oxygen with which to combine, becomes mechanically mixed with the steam.

The products which pass to the atmosphere from such combustion are carbonic acid, nitrogen, any surplus of air and the steam with the solid carbon mechanically mixed—this latter forming the dark, dense smoke as it comes from a chimney.

Beating Engine.

The illustration shows a new form of beating engine in which the operation of disintegration shall be practically continuous, the stock being fed into one end and discharged from the other in a sufficiently disintegrated and reduced condition.

Figure 1 is an elevation of the machine, with one of the side plates removed; Fig. 2 is a plan view, shown partly broken away; Fig. 3 is a detail in section of the adjusting devices; Figs. 4 and 5 are details showing the construction of the beaters or disintegrating cylinders; Fig. 6 is a detail view of the shower pipe used in connection therewith; Fig. 7 is a detail view of the cylinder bearing.



Beating Engine.

A a represent a main casing, which consists of suitable side plates *a'* having slotted openings a^2, into which are fitted bearing blocks a^3 for supporting the journals of the cylinders *b b' b²*. These cylinders *b b' b²* are enclosed within the outer casing *a*, a suitable cover, a^4, which fits between the side plates *a' a'*, being adapted to close the top of said casing. The bottom of the casing consists essentially of a sliding bed plate *c*, which rests on suitable flanges or ways, a^5, formed on the inside of the side plates *a'* below the cylinders. The cylinders *b b' b²* are each formed on the outer periphery with a series of ribs, b^3, which operate in conjunction with opposing serrated concave plates $c' c^2 c^3$. These concaves are formed of hard metal, preferably of steel, and are removably seated in the bed plate *c*.

Each of the cylinders *b b' b²* is preferably constructed on its periphery of a series of flat steel bars or plates, b^4, which are supported at each end, and if desired at suitable intervals, by supporting heads, b^5, having central openings, b^6, to fit on supporting shafts, b^7, which form the journals for the rollers. The heads b^5 are provided with peripheral guides, b^8, into which the bars or plates, b^4, are seated. Each bar is further provided at each end with a notched opening, b^9, the supporting head b^5 being similarly notched out, as shown at b^{10}. When the bars are in place on the cylinder a retaining ring, b^{11}, is driven into the notches thus formed, and thus retains all of the plates and bars securely in position on the supporting heads, so as to form a ribbed or serrated cylinder. The spaces or interstices between the ribs or plates are then filled, preferably with wooden blocks or strips, b^{12}, which are driven firmly between the plates or bars, so as to stand at a suitable distance below the outer peripheries of the plates, thus completely closing the outer periphery of the cylinder, but leaving the ribs or plates projecting sufficiently to form a disintegrating surface with the concave plates. Each of the cylinders is similarly formed, but the plates or bars in each succeeding cylinder are placed closer together, so as to form a disintegrating surface of fine dress, the concaves being similarly formed.

The bed plate *c* closes the entire bottom of the outer casing except at the discharge end thereof, where an opening, *d*, is left, over which extends a screen, *d'*, which bridges said opening and extends from the bed plate to the discharge opening *e'*.

The top or cover a^4 is preferably formed with curved portions, a^6, concentric to the cylinders *b b' b²*, and at the point where these curved surfaces join and immediately over the space between the cylinders, the cover is provided with a laterally extending opening, a^7, termed the shower pipe, and which is perforated with a series of openings, a^8, throughout its length. A water pipe, a^9, communicates with each of these shower pipes and when in operation showers down on the stock between the respective cylinders so as to wash the stock from one to the other of the cylinders and assist in the disintegration.

Means are provided for adjusting the bed plate *c* longitudinally on the ways of flanges, a^5, which are inclined. The concave plates $c' c^2 c^3$ are also formed higher at one side than at the other to correspond to the inclination of the bed plate. As the bed plate therefore is moving up or down on the ways, the distance between the outer periphery of the cylinder and the concaves is adjusted. This adjustment is accomplished by means of a wedge-shaped piece, *f*, which extends from side to side of the casing, passing through suitable openings, f', in the bed plate so as to bear against the same on one side while the opposite side bears against the side plate *a'* of the frame. By moving the wedge in or out through the side plates the bed plate is moved longitudinally on its ways or flanges. An adjusting nut, f^2, operating on a suitable screw-threaded stud, f^3, is provided for moving the wedge-shaped piece in and out; this adjusting nut is formed in the nature of a sleeve which fits in a slotted opening, f^4, in the wedge-shaped piece, with shoulders on the opposite sides thereof, so that as it is turned in either direction on the screw-threaded stud f^3, the wedge is correspondingly moved.

In operation the stock to be operated on is admitted with a quantity of water through the opening *e* and comes in contact with the first cylinder, *b*, and is carried thereby down along the bed-plate between the cylinder and the concave, the cylinder being revolved by any suitable means for this purpose. It should be stated here that the cylinders in successive order are revolved at an increased speed, so that the stock is fed to the slower and coarser cylinder, and passes thence to the finer and higher speed cylinder, thus forming a gradual reduction of the stock, which is carried from one to the other, partly by gravity and partly by the action of the cylinders, assisted by the water which is showered in from the shower pipes between the respective cylinders. After passing the last cylinder, and between it and its concave, the stock ascends along the screen *d'* to the discharge opening *e'*, where it is separated from the water used in the disintegration, and is ready for such other treatment as is necessary.

The bearing blocks a^3, supported in the slotted openings, permit an upward movement of the respective cylinders in the event that any foreign substance should enter between the same and the concaves. If desired, springs may be employed for holding the cylinders to their work, but ordinarily the weight of the cylinders will be found sufficient for this purpose. Means are also provided for adjusting each cylinder independently of the others. This is preferably accomplished by means of set screws, *g'*, arranged in the bottom of each slotted opening and on which the bearing blocks rest. This independent adjustment of the rollers is desirable so that the proper degree of fineness may be secured for each successive operation. It is further useful in the event that a new concave is placed in the bed plate, in which case its roller is adjusted to suit. The adjustment of the bed plate, it will be understood, adjusts all of the concaves uniformly, while the set screws serve to adjust each cylinder independently.

Sulphite Fibre Manufacture—XI.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By Sanford E. Thompson.

Perhaps the most important part of properly running a digester house is attending to the repairs. Of course every mill has definite weak spots, and the particular parts which need attention are too familiar to every superintendent to make it advisable to enumerate them here. It will be well, however, to make a few general remarks on the subject, in order to call attention to the great importance of the matter.

Nearly all breaks and a large proportion of the poor cookings may be avoided by attention to repairs. Poor cookings, which are usually attributed to bad luck, are too often due to some neglect on the part of the cook or of the man in charge of the repairs. There are certain parts of the digester and its connections which must be examined very carefully after every cooking. It is well also to have stated times for making some of the repairs.

The amount of repairing required depends largely upon the way in which the digester is constructed, not only upon the kind of lining, but upon the way this lining is put in and the method of making connections with the collars and with the test cock and thermometer. The valves also and the piping outside of the digester form a large item of expense for maintenance if they are not well designed and located.

In lining a digester with cement or with cement and tile the same principles which have to be followed in any first-class masonry construction must be observed, except that everything must be done even more carefully. One point which has not been recognized until lately is the fact that it is impossible to make a perfect joint between fresh cement and cement which has thoroughly set. In out-of-door foundation work, where Portland cement concrete is used, I have seen water soak through a wall of solid concrete 4 feet in thickness, the moisture working between two layers which had been laid on different days. This occurred after both layers had thoroughly set, and had been in position for a week or more.

To obviate this difficulty, it is sometimes the practice in engineering, when it is necessary to lay cement concrete in layers, as, for instance, in the construction of a dam, to corrugate the surface—that is, to lay joists parallel to each other in the cement

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until it has set, when, on removing the joists, a series of depressions are left, into which the first of the fresh concrete will be laid, thus interlacing the two layers and preventing any slip or leakage. Such care exercised in general engineering illustrates the necessity of lining the digester with as few dry joints as possible, and of using extreme care in patching.

It is of course needless to say that when any repairs are to be made every particle of cement which has been acted upon by the acid and is in any way discolored or loose must be removed. The surface must be well wet down before putting on the fresh cement. The water fills the pores of the laid cement, and prevents the absorption of the water in the new cement. The old surface should be as rough as possible. A solution of silicate of soda is sometimes used when making up the cement for a repair, in order to hasten its setting. It is seldom advisable to use this, however, as it renders the cement more liable to crack.

Special care should be taken that all sand used either in lining a digester or in making repairs shall be perfectly clean and contain no iron. A small amount of clay or of vegetable matter will retard the setting of the cement and prevent it from reaching its full strength, while iron will render the mortar less resistant to the acid.

Some of the Mitscherlich mills follow a system of repairs in taking care of their tiles, which might well be observed with upright tile lined digesters. When the tiles are to be repointed, instead of merely breaking off the surface and removing loose particles, the joints are first chipped out until every particle of discolored cement is removed, and the hard bluish-gray cement is reached. This chipping is done with a narrow cold chisel adapted to the purpose. After the joints have been chipped out, they are inspected by the foreman, and are then wet down with a brush, and the fresh cement is put on with a small trowel. Sometimes a trowel having a blade shaped like a knife is used.

This work is done in each digester every four to six months. The Mitscherlich digesters require repairs at the connections between the tile lining and the lead collars after nearly every cook, and the discolored cement has to be chipped out and repointed. The interior of the upright or rotary digesters ought to be examined at least once a week, as bad leaks may often be prevented by making small repairs where the cement shows signs of disintegration.

Next in importance to the lining are the valves. In selecting a valve for a sulphite digester or for any of its connections those should be chosen which are of durable material, simple in construction, well designed and not easily plugged with pulp. Phosphor bronze valves are used almost exclusively in this country for bisulphite liquor, although lead lined valves are yet in use in a few mills. While phosphor bronze is slightly acted upon by the acid, it is the best material which has yet been produced. It is as true of a valve as of any other fitting which comes in contact with bisulphite liquor, that the one which is the least complicated and has the fewest parts to wear and get out of order is the best.

A well designed valve has no weak points. Sometimes a valve will be constructed with a small stem, or with an internal thread which is easily acted upon by the liquor, and while the valve, as a whole, is of good construction, its one or two weak points may make it totally unfit for the use for which it was intended. Yet many mill men send in an order for phosphor bronze valves without specifying the style desired, and in fact without knowing just where the weak spots lie.

Most of the Mitscherlich mills use for all of their connections and piping the German lead lined valve. The larger valves of this pattern are angle valves, the pressure coming against the bottom of the disk. Every part of the interior of the valve, including a portion of the stem, is covered with lead. If one of these valves leaks on account of any irregularity in the seat or the disk it may be repaired by turning these off with a special tool made for the purpose. When badly worn they may be relined. Care must be taken in operating these valves that they shall not be strained by trying to close them when a piece of pulp is on the seat. If they leak from this cause and cannot be closed with a moderate purchase on the hand wheel the connecting pipe has to be removed and a blind flange is put on. These valves have to be imported and are very expensive.

The most important valve in an upright digester is the blow-off valve. One style of blow-off valve which is sometimes used is a plug valve. This is a straight-way valve, closed by a tapering plug somewhat larger than the nominal size of the valve, through which is bored a single hole at right angles to the stem. When the valve is closed the blank surfaces of the plug are next to the opening through the valve. To open the valve the plug is revolved by means of a lever fastened to the stem, and the hole through it is made to coincide with the openings through the flanges of the valves. In order to make this tight while the digester is cooking, the plug is screwed down by bolts, which may be loosened when ready to blow off. The great advantage of a plug valve for a blow-off valve and for other purposes is that it never fails suddenly.

The stem of a gate valve may come off during a cook or it may be plugged so that it is impossible to open it, but, while a plug valve may leak badly it always gives ample warning before totally failing. The valve, however, which has now come into extensive use as a blow-off is the Y valve. This is a combination of a straight-way gate valve, a check valve and an angle valve. The disk and the seat are similar to an angle valve. The seat is inclined at an angle of 45°, as in a check valve, and the stem passes up through the case at the same angle. The pulp or liquor thus passes through an oblique opening, but its course is straight. Whatever blow-off valves are used they must be carefully watched, and if there is any leak during one cook they must be repaired before the next cook is put on.

The valves in the stem piping and also in the relief pipe require very careful attention, and should be selected with reference to the points mentioned above. Y valves, similar to those used for blow-off valves, as described above, are made in small sizes by Jenkins Brothers, and may be used for relief or gas valves. Their extreme simplicity renders them less liable to get out of order than a gate valve, and the seat, when worn, is easily renewed. It is a good plan to renew the small valves at stated intervals. After finding out how long a valve will last, make a rule that it shall be renewed once in so often. This interval should be short enough to leave little probability of the valve wearing out before it is replaced. While this will create a slightly larger expense in the cost of valves, it will occasionally effect a saving in a single cook, which will more than make up for it. Exact duplicates of every valve should of course be kept in stock, and these valves should have their flanges drilled to fit the location for which they are intended, so that they will be ready to put in at a minute's notice.

Correspondence.

FOX RIVER VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 11, 1895.

The condition of trade in this valley just at present shows no marked changes from that of the immediate past. It is possible that the finer grades of goods are a little duller than last month, but low grade papers continue to be in good demand, and the mills have all that they can do to fill orders. The print paper men feel that the bottom has been touched in the matter of prices, and that things are already on the upward grade. It is said that cheap print has gone up about 15 cents a hundred, and that the rise is one which may be expected to be maintained. It is hoped that all other papers in the course of a short time may be sympathetically affected.

A meeting of a large representation of the manufacturers of the valley was held yesterday at the office of the Kimberly & Clark Company, in Neenah, to decide upon the advisability of reducing the amount of water which is being drawn for power purposes. Under the present arrangements the water wheels are not turning on Sundays, and it was decided to further limit the flow by closing the wheels on Saturdays also. This action was taken entirely without the suggestion of the Government. It does not of course preclude the manufacturers from running on Saturdays by steam power, and as a matter of fact most of the manufacturers expect to run their mills on those days by this power.

The Shattuck & Babcock Company expects some day this week to place its order for its steam engine for the mill at De Pere. The engine will be in the neighborhood of 1,000 horse power in capacity.

Geo. A. Whiting will also this week give out the order for the Wisconsin River Paper and Pulp Company's new paper machines to replace the ones destroyed by fire. The machines will be 118 and 106 inches in width, with twenty-six dryers and 60 foot wires and guaranteed to run 400 feet a minute. The representatives of the various machinery firms are on the ground figuring on the job. It is expected to have one of the machines running in ninety days and the other in four and a half months. Print paper will be made exclusively, and the company expects to be in the best possible shape to make it cheaply and expeditiously. The work of rebuilding the mill is well under way. It has been found that only a small portion of the old foundations can be used again, and a wholly new structure will have to be put up from the beginning. The wet machines of the pulp mill were placed in the paper department, and of course were burned with the paper mill. New ones have been procured, however, and it is expected that the pulp mill will be in operation by the last of this week, the same as before the fire.

Mr. Whiting, by the way, is making preparations for changing the grade of paper which is made at the Menasha mills. He has ordered from the Holyoke Machine Company a stack of supercalenders and ream and sheet cutters, and will put the mill on a higher grade of paper. It will be supercalendered book and some low grade writings. The machinery is to be delivered by the 25th of this month, and the change will be made as soon as practicable after it arrives.

In referring to the affairs of the Wisconsin River Paper and Pulp Company above, it should have been stated that in addition to the rebuilding of the mill on the lines of the old one an addition will be made in the construction and equipment of a well foun dmachine shop, containing all of the necessary tools and appliances. A new superintendent has been engaged for the mill in the person of Lee Parks, of Glens Falls, N. Y., a paper maker of experience and ability.

News from Park Falls, Wis., is to the effect that the new mill of the Park Falls Paper and Pulp Company is progressing toward completion. The buildings are all up and the machinery is now being put in place. The pulp department, containing eight pulp grinders, will be running by the first of next month, and the paper making department by the first of the succeeding month. The paper mill will for the present be equipped with one machine, 96 inches in width, but another can be added at any time when the measure seems advisable. The output of the mill will be print paper.

The mill of the Howard Paper Company, at Menasha, which not long ago was put through a course of sprouts in the matter of repairs and improvements, is now running along very smoothly under the ministrations of Superintendent Campbell. The mill was thoroughly overhauled and is now in excellent condition. It is making manilla paper, only one of the machines being at present in operation.

The Chicago and Northwestern Railroad Company is building a new side track at the plant of the Manufacturing Investment Company in this city. The track will be used for unloading pulp wood. It will run along the water power canal leading to the mill, and the wood will be unloaded directly into the water, which will save a second handling, and be very economical in time and money for the company.

Since the improvements made within the past year by General Manager A. L. Smith, Jr., the Eastern mill of the Manufacturing Investment Company has been put upon a paying basis. It is running right along, is getting out good fibre and large quantities of it.

Some little opposition is arising in this city against the building of the proposed Valley Terminal Railway, mention of which has been made in these columns, and the surveys for which have for a couple of weeks past been under way. Appleton people fail to see where the benefit to them is to come in, and the company asks for very valuable privileges throughout the city. It is said that the project is looked upon more favorably at Kaukauna. Action one way or the other will be taken within a week upon the Appleton franchises asked for.

Work was begun yesterday upon an addition to the mill of the Patten Paper Company in Appleton. It is to be 36x26 feet in size, two stories high, with a stone basement, and will be used for the accommodation of a couple more drainers and the storage of stock.

Work was also commenced this week upon the new boiler house for the Appleton mills of the Kimberly & Clark Company, which is made necessary by the new steam engine and boilers which the company has ordered. The new house will be in the form of an addition to the present house, and is to be located on the west side of it. It will be large enough to accommodate the 600 horse power of new boilers which the company expects soon to receive.

Engineer C. B. Pride has recently returned from the neighborhood of Wausau, on the Wisconsin River, where he has been making plans for a proposed water power improvement. The exact nature of the improvement is not as yet stated.

Charles Riggs, of Appleton, a well-known contractor, who is now engaged upon the work on the river in the vicinity of the mill of the Manufacturing Investment Company, had a very narrow escape from death one day last week. A portion of his clothing became caught on the knuckle of a revolving shaft, and he was carried around the shaft about forty times before the machinery could be stopped. Luckily he was not pounded against anything, so that he escaped with a few severe bruises.

Information received from Jos. Thomas, formerly with the Pulp Wood Supply Company, who was compelled to go West for his health, is to the effect that he is improving and hopes soon to be thoroughly well again.

S. F. Smith, of S. Morgan Smith, York, Pa., is in the valley calling upon the paper manufacturers in the interests of new water wheels.

W. C. Skinner, of Stillwater, N. Y., is here on the same errand, with the exception that it is felts and not water wheels.

Mayor Peter Thom was made the happy father of a new son one day last week.

C. A. Byrnes, of Kimberly, has returned from his trip to the region of London, Ont., where he went to visit relatives. He found everybody well, but reports that the farmers are in a very bad condition on account of the crops being thoroughly dried up.

FOX RIVER.

GREAT BRITAIN.

[FROM OUR REGULAR CORRESPONDENT.]

LONDON OFFICE PAPER TRADE JOURNAL,
1 MITRE COURT, FLEET ST., E. C.,
LONDON, England, May 31, 1895.

A pass to the Hook of Holland was most kindly placed at my disposal by the Great Eastern Railway last week, and I paid a flying visit to the Dutch capital to see the Exhibition. This Hook of Holland route, only recently opened, brings the shores of the Zuyder Zee within twelve hours of London, and as the passage both ways is at night it is quite possible to put in a whole day's business or pleasure in

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———ALL TESTS SODA ASH AND ALKALI.———
Sole Agents for the United States and Canada of THE UNITED ALKALI CO., Ltd., of Great Britain.
FOR THE SALE OF THEIR VARIOUS BRANDS OF BLEACHING POWDER.

Amsterdam and Rotterdam with only a single day's absence from London stones. The magnificent ships of the company are miniature American liners. Each saloon passenger has a little cabin, with lavatory fittings and the electric light, and all of the arrangements of every description are admirable. The Hook was formerly merely a signal station at the mouth of the new waterway to Rotterdam; but, mainly through the efforts of the Great Eastern Company, a large railway station has been built there, and the line runs down the river bank to Schiedam, where it joins the main line between Rotterdam and Amsterdam. It is pleasant enough to take the sail down or up the river, and that is the way I came back. As we started punctually to time, and arrived even a little before it, I had an ample opportunity of surveying the country around the Hook.

As for the Exhibition it is most wofully unready. It is held in the Rijks Museum, where I saw the last Tentoonstellung in 1883. By-the-bye, if you are tired of 'exposition' this will be a good word by which to denominate your next American show; but I should not advise any American paper man unless he is on pleasure bent to waste time by visiting this so-called international exhibition. I say so-called, because although there are countries enough in all conscience, each—with perhaps the exception of Holland and France—has a mere strip of show cases. I entered the hall a good week after the opening day and found it a wilderness of empty spaces, with here and there an oasis of packing cases, with the exception of England, which has a small show but is perfectly ready, and France, which is nearly so. The paper people are in very small force. Paul Herzberg, of Berlin, has a good selection of sanitary and filter papers. There is a small case of straw pulp from the Papier-Fabrik Phoenix, of Veendam, Holland, and an anonymous case of colored papers in close companionship to Gouda cheeses and chicory from Bourne. The incongruity of this shows that even the Dutch section is not particularly spacious and is only representative inasmuch as it gives mere samples of the industries of the country. As a matter of fact not even the catalogue is yet out, and as for an American section I could not even find a Yankee packing case in the hall. I note, by-the-bye, that Holland makes cash registers for herself and also imports them from Germany. Both the home-made and the imported article, however, are extremely clumsy and inelegant in comparison with the American automatic tills, which have completely captured the English market. For the American visitor on pleasure bent, however, or with a day at his disposal, I strongly recommend a trip via the Hook of Holland to Amsterdam, and he should return as I did, getting on the steamer at Rotterdam.

Her Majesty, in the customary birthday distribution of honors, did the handsome thing by literature and the fine arts this year. Everybody remarks, however, that J. J. Colman is left out of the list. The fact of the matter is that the Government cannot talk about abolishing the House of Lords and at the same time distribute peerages, and it is understood that Mr. Colman will take nothing less. As I have told you before, Colmans make not only the mustard and starch for which they are celebrated, but they also possess a paper mill, mainly to manufacture wrappings for their own use. Norwich as a city owes its success to mustard. The commercial importance of the town was at one time declining very rapidly, but the manufacture of the condiment by the Colmans saved it. Their works, including the paper mill, employ more than 2,200 men and women, and have a river frontage of the best part of a mile and cover at least 25 acres of ground.

John Brunner, of Brunner, Mond & Co., can now write Sir before his name. He established in partnership with L. Mond the vast alkali works at Northwich, and although he is the son of a Swiss pastor he was born at Everton, near Liverpool. Mr. Mond is of German birth and is a chemist of great ability. Mr. Brunner has the organizing brain and the business aptitude.

I mentioned in my last letter that Edward Partington's action versus the West Hartlepool Pulp and Paper Company was before the courts. Mr. Partington claimed that the Hartlepool Company was infringing a patent for the use of paraffine in removing or preventing the formation of partly insoluble specks in the manufacture of sulphite pulp. It was held, however, that the infringement was not proved, mainly on the ground that paraffine had been used before the date of the patent, and the action was accordingly dismissed with costs.

Another pulp action of a different nature was brought by the Vestfos Cellulose Works against Schenkenwald & Co. This latter company bought 1,500 tons of pulp in 1893, and as the prices have been falling with commendable regularity ever since, they naturally turned a little sour on their bargain. As they could not or would not take the pulp, the Scandinavian concern has "sold against them" and the matter was settled out of court, Schenkenwalds agreeing to pay $12,000 and costs.

A deputation of paper makers and paper mill workers saw the Under Secretary for the Home Department at the House of Commons on the 23d to place before him objections to the prohibition of night employment of boys under sixteen years of age in paper mills, as proposed by the Government Factories and Workshops Bill. The deputation, which was introduced by Sir John Evans, represented that the work of the boys was light and healthy, and that the process of manufacture necessitated the continuous running of the machinery from Monday morning until Saturday afternoon. The trade was already subjected to severe legislative restrictions and worked considerably shorter hours than on the Continent, while the Continental manufacturers were protected by tariffs hostile to English interests. Further, the area of employment was being gradually restricted by the importation of wood pulp, which displaced many of the preparatory operations. Mr. Russell, in reply, said that he could not readily acquiesce in the proposal to keep boys of fourteen up all night; that night was the time when they should be in bed, and if the conditions of the trade were such that the process must be continuous resort must be had to those who had reached a period of growth when they were not in any sense children. Such conditions were a grievous state of things, and if it was possible for the Government to put an end to them it ought to attempt to do so. It must do what it could to protect boys from evils which its members would not suffer their own sons to submit to, and to have them brought up under conditions most favorable to their physical and mental development. He promised, however, to lay the views of the deputation before the Home Secretary.

A steamship service inaugurated by Felber, Jucker & Co. between Manchester and Finland direct has proved successful. By way of experiment two steamers were chartered, the Blencowe and Springhill, to bring cargoes of paper to Manchester. This proved so satisfactory that it was decided to provide regular sailings this year, and the Ross, a steamer of 1,250 tons, was chartered. The vessel arrived early this month on her first trip from the Baltic with a full cargo of paper and wood pulp. Full cargoes of wood pulp, paper and timber have been booked for every homeward voyage the vessel can make this year. An unusually large quantity of wood pulp was discharged by steamers from the Baltic during the week ending the 15th inst. The arrivals included 5,330 bales from Ahus, 340 bales from Christiania, 260 bales from Drammen, 5,716 bales from Gothenburg, 1,014 bales from Hango and 1,360 bales from Halmstadt—a total of 14,222 bales. The arrivals at other ports were; London, 4,785 bales and 250 tons; Preston, 7,578 bales; Hull, 3,262 bales; Grangemouth, 2,428 bales; Granton, 2,141 bales; Glasgow, 800 bales, and Leith, 729 bales. No arrivals are reported at Liverpool. It is interesting to observe that of the 6,617 bales imported from Finland 6,344 came to Manchester, the remaining 273 bales being discharged at Hull.

In round figures the total liabilities of Andrew Jack, paper merchant, Melbourne, are now stated at $500,000. Jack financed a London firm, which failed very heavily some time ago, and, under the impression that he was a wealthy man, certain London houses gave practically unlimited credit to this house and they were involved heavily, one firm to the extent of $50,000. In Jack's collapse the Bank of South Australia ranks as an unsecured creditor for over $250,000.

I mentioned the failure of the two firms of Tod, with mills near Edinburgh. The Springfield Mills at Polton, worked by William Tod, Jr., & Co., which have been carried on under trusteeship during reconstruction and have two excellent machines on fine printings, &c., have now been sold for $50,000. One of the family, Leonard Tod, not formerly, however, in partnership with either firm, is understood to be the purchaser.

A millboard manufacturer, John Goodson Turney, of Wooburn Mills, Wooburn, Bucks, is among the bankrupts, but although the liabilities amount to a fair sum in the aggregate, they are spread over a large number of hands and nobody is hit very hard. In fact, the trade in general seem to be very well out of the failure, as the larger debts are to members of the family and private individuals.

St. Neots Paper Mill, which has made a noble fight with bad trade, seems to have had a much more successful year than hitherto. It has been able to pay a small dividend to its shareholders and to carry something forward after allowing for contingent liabilities and interest on debenture capital. The directors of this mill have for a long time given their services gratuitously and have expressed their determination of doing so until it is a commercial success. The Basted Paper Mills have done very well. They have paid 6 per cent. on the preference and 10 per cent. on the ordinary shares for the year and placed a substantial sum to the reserve fund, which now amounts to $22,500.

I am sincerely sorry that I was lead into error concerning Soper's stoppage. It was merely temporary for additions and improvements. ALFA.

[We have received a communication from Messrs. Soper & Co. stating that they had not shut down their mills, but are about to largely increase their plant. We regret any statement made by our London correspondent which might tend to discredit that firm.—ED.]

BOSTON.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
67 FEDERAL STREET,
BOSTON, June 18, 1895.

What is to be said this week concerning local business must be but a repetition of statements so often made of late.

To say that the paper business with city jobbers is "fair" cannot be regarded as a news item, for such a report has been repeated right along for weeks. Yet that is the statement which dealers make concerning the present state of trade, and so it "goes" for all that it means. When dealers vary their reports the changed conditions of business will be reflected in these communications.

From the manufacturers' standpoint reports vary a little according to the line of paper made.

News of course is the feature of the paper business and that line is moving quite briskly.

Manillas seem to be in very good demand and most mills running on this grade are busy for the time being.

Mill orders for manilla tissue are being received quite liberally, so much so that higher prices are asked.

Book papers continue to range on a low basis, with limited demand and subject to severe competition.

Fine papers are moving fairly well, but a better market will no doubt develop ere the fall season opens.

In paper stock actual sales are rather limited. Inquiries are frequently noted, but the disposition to get prices shaded when importers cannot meet the wished for concessions prevents the booking of all of the orders offered, and so importers report business quiet, with a better outlook.

Charles D. Brown and Colonel Train returned this morning from a visit to Rumford Falls, Me., where was held yesterday the annual meeting of the Rumford Falls Woolen Company.

Adna T. Denison, the Boston representative of W. H. Parsons & Co., of New York, is visiting his father in Mechanic Falls, Me., this week.

Charles A. Dean, of the Hollingsworth & Whitney Company, took the train yesterday for Chicago.

C. A. Brown has been detained at his home in Salem, Mass., all the week because of the serious illness of his wife. Until today grave doubts were entertained of Mrs. Brown's recovery, and even now her condition is such as to cause no little anxiety.

Stone & Forsyth are making big headway in their paper box department and have quite a large force of girls at work. The firm is obliged to run this deparment overtime every day in the week.

Percy M. Herrick, of Train, Smith & Co.'s New York branch, favored his many Boston friends with a visit during the past week.

Hugh J. Chisholm, of Portland, Me., passed through the city this morning en route to New York, where the prominent news men are again gathered for consultation.

Other recent trade representatives reported in town were: J. Fred Webster, of Bangor, Me.; Charles H. Milliken, of Mechanic Falls, Me.; A. N. Burbank, S. T. Coy, Charles E. Robertson, of Bellows Falls, Vt.; Mr. Bartlett, of Nashua, N. H.; Benj. M. Jackson, of Pawtucket, R. I.; A. B. Daniels, of Adams, Mass.; Wellington Smith, of Lee, Mass.; W. J. Raybold, of Mittineaque, Mass.; John D. Carson, of Dalton, Mass.; Mr. Williams, of Worcester, Mass.; Charles S. Mayo, of Lawrence, Mass.; Fred Temple, G. T. Keyes, of Pepperell, Mass.; Hon. William Whiting, Mr. Betts, of Holyoke, Mass.; W. N. Chapin, of Ticonderoga, N. Y.; T. C. Huyck, of Albany, N. Y.; I. R. Elston, D. H. Doremus, C. H. Mortimer, of New York.

The midsummer reunion of the Boston Paper Trade Association will take place about the middle of July, the exact date not yet having been decided. The gathering will be at the house of the Hull Yacht Club, down the harbor. It is proposed that the party shall leave for Hull early in the morning, have dinner at the club house and enjoy the sports which may be offered in the way of billiards, bowling and yachting. An orchestra will accompany the crowd, and everything will be run in an informal manner. The object will be to have a quiet, enjoyable time, and it is expected that at least 100 will participate in the trip.

Hardy & Pinder, of Fitchburg, Mass., have recently mailed to their friends of the trade an advertisement of their screen plates which is certainly novel and unique. The mail brought one to the writer and it awakened some little curiosity as to what it was all about. The outside wrapper was made up of two very thin sheets of wood held together by rubber bands and covered with odd designs stamped in colors, and bearing a notice in full-faced type "Postage Full Paid." Removing the bands the folder opened out 2 feet, and then the claims made for Hardy & Pinder's screen plates for pulp and paper mills came to notice. The argument presented in behalf of the merits of the "patent cast metal screen plates," made by Hardy & Pinder, is so uniquely put forth and so convincingly that one is forced to give the firm credit for originality.

The value of books and paper exported from Boston during the week to June 7 was books, $2,961; paper, $4,714.

We are having very pleasant weather and some fine baseball playing. And, please note, the Boston team heads the list.

DERNIER.

MIAMI VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, June 18, 1895.

There are some people who will agree with a gentleman who spoke to your correspondent this week when he said:

"It takes a philosopher—I mean a business philosopher—to give you a definite idea of the business situation. One man says that his mill is rushed; another gives you an immoderate conception of a moderate condition; still another expresses confidence, but seems to be anxious. Of course you have met the pessimist and the optimist, and are about as little prepared to inform the people as I am to enlighten you. You have all sorts of explanations—now make the deduction."

It is inferred that the paper manufacturer-reader is better prepared to do that than the writer, and the perplexing question is referred to him with full authority to express any kind of an opinion.

Under all expressions of sentiment there appears to be a solid business current. Prices in nearly all paper products are maintaining their own, and the disposition to "cut" or "sell cheaper than our neighbor" seems waning. Nearly every seller and dealer must confess his weakness in this respect during the trying dullness.

In paper stock circles an apparent breeze is stirring. A Mill street merchant, who represents a bulk of the Dayton and Miami Valley trade, said: "We handled more goods this week than for many months, but we made less money. I referred to corresponding records for the past two years to-day, and was actually surprised to find what I have stated to be a fact. Our tonnage was immense, our income comparatively small. Prices in our line have sunk to such a depth that they are almost out of our sight, but the commercial wind is getting stiffer, and, with others, I believe that better times are comfortably near. I think that legislative action at the next session of Congress will greatly relieve the situation, and furthermore, I believe that such action will be taken."

Paper novelty concerns are busy; the demand for news keeps the mills humming, and as there are no immediate prospects for summer suspension the outlook, based upon the rather erratic and fickle reports, goes favorably against unusual odds. Although it is not definitely known in legal circles there is a well formed impression that John and Frank Aull, brothers of the late lamented William J. Aull, will bring suit against the Cincinnati and Memphis Packet Company for an amount of damages aggregating either $50,000 or $75,000. It will be vividly recalled by the countless friends of the Aulls that Wm. Aull and wife lost their lives while en route to New Orleans on the Longfellow, some time ago. The brothers of the deceased, well-known paper novelty manufacturers, were placed at a considerable expense in the recovery of the body, and claimed that they were greatly handicapped in their efforts by the negligence of the company's officials.

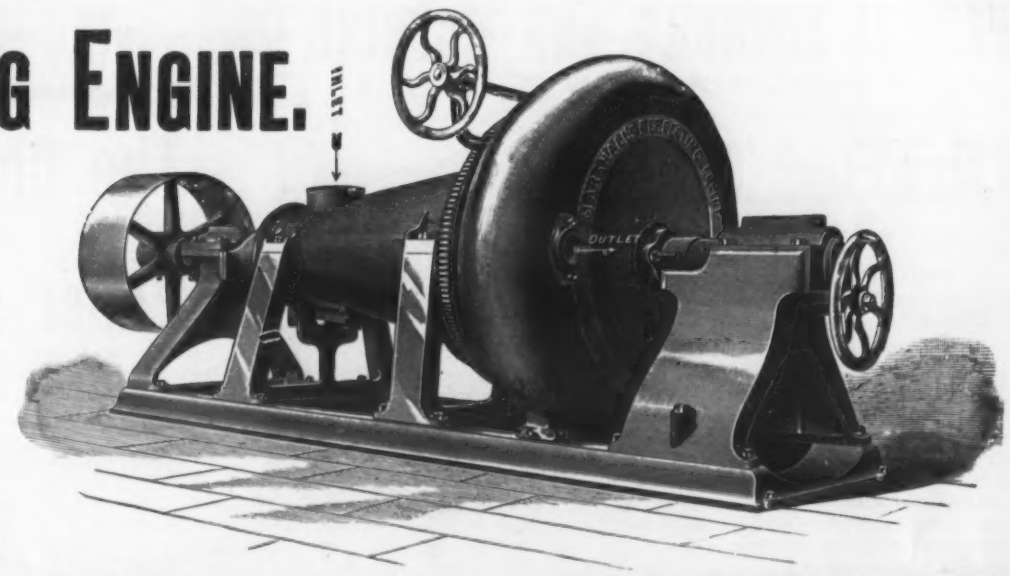
John W. Aull, when questioned, did not deny that such action was contemplated. The matter rests in the hands of a Dayton law firm, and may be pushed forthwith.

It seems that the suspension of the publication of the *Sunday World* was only temporary. That sheet again appeared last Sunday in a new dress, and with renewed promises of a big performance henceforth.

A gay party of nearly 100 of Dayton's substantial manufacturers drank to the

THE PUSEY & JONES COMPANY,
—Builders of—
WILMINGTON, DELAWARE.
PULP & PAPER MACHINERY
— Sole agents for the SALOMON-BRÜNGGER SULPHITE PATENTS.
WELDED DIGESTERS furnished only by THE PUSEY & JONES COMPANY, —
— CORRESPONDENCE SOLICITED — — WILMINGTON, DELAWARE.—

MARSHALL'S PATENT PERFECTING ENGINE.



USED ON ALL CLASSES OF STOCK
AND EVERY QUALITY OF PAPER.

This Engine will produce a **better finished, stronger** and **more even** sheet of paper from the same materials than can be produced by any other mechanical process, and at the same time will greatly **REDUCE** the **TIME** and **POWER** required for Beating.

MARSHALL ENGINE CO., Turner's Falls, Mass.

BENTLEY & JACKSON, Bury, England, Near Manchester. | USED IN THE LEADING MILLS OF THE WORLD. | A. KAINDLER, 60 Rue St. Andre Des Arts, PARIS.

YOU CAN USE THE AEROPHOR TRADE MARK **PAPER DAMPENER ON ALL YOUR MACHINES AND IMPROVE THE FINISH QUALITY OF YOUR NEWS, BOOK AND MANILLA.**

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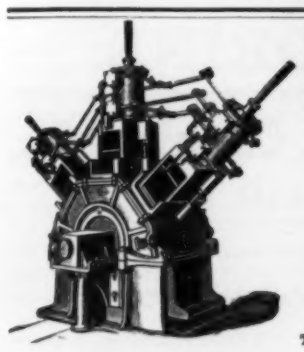
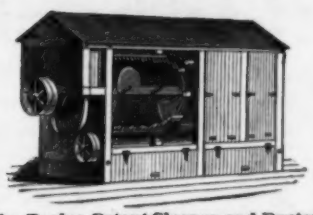
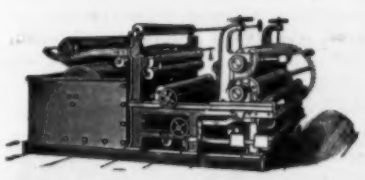


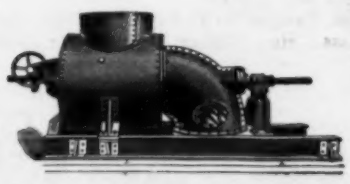


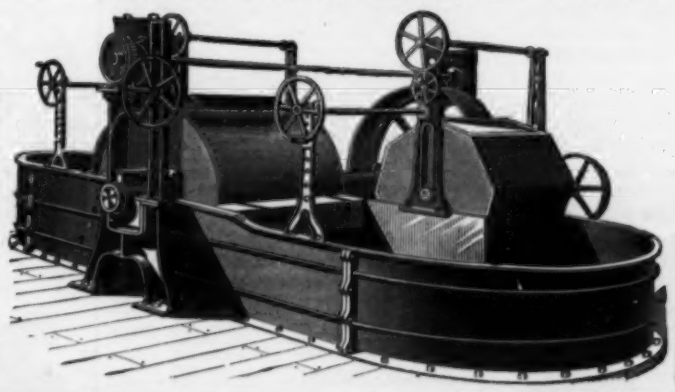
The Taylor Patent Cleaner and Duster.

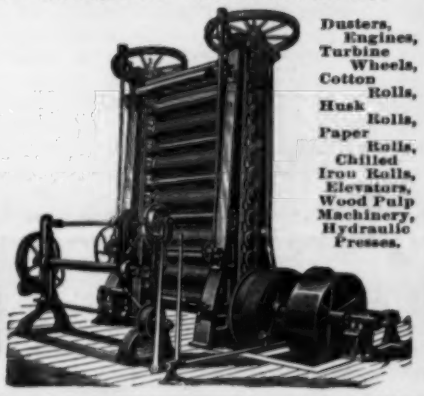
All Kinds of CALENDERS for PAPER MILLS, GLAZED PAPER and CARDBOARD MANUFACTURERS.

CORRESPONDENCE SOLICITED.

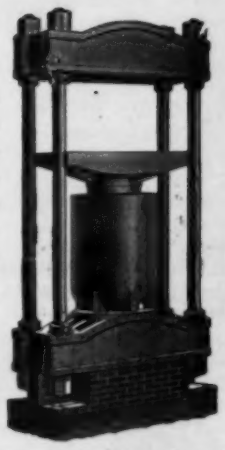








Dusters, Engines, Turbine Wheels, Cotton Rolls, Husk Rolls, Paper Rolls, Chilled Iron Rolls, Elevators, Wood Pulp Machinery, Hydraulic Presses.



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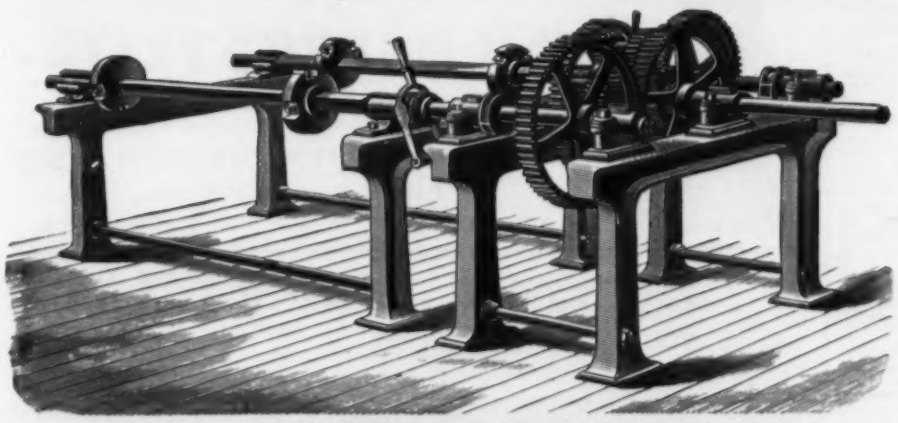

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I have on hand ***six Pulp Grinders,*** three pockets, to grind wood 17 inches long; and ***eight Grinders,*** heavy pattern, to grind wood 24 inches long; also ***Barkers*** and ***Splitters.***

Many of the old style New England grinders can be rebuilt so as to greatly improve them.

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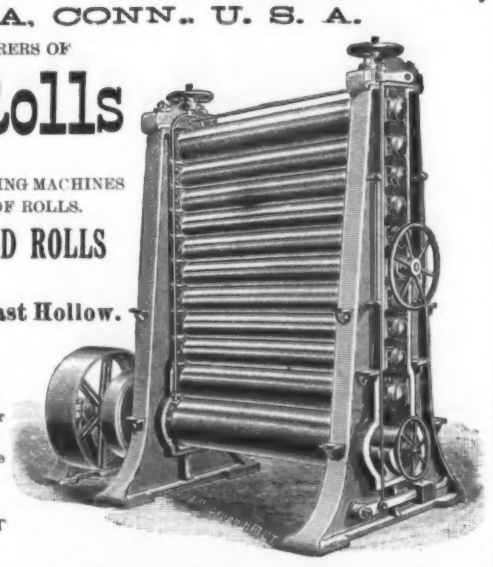

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General Chemistry.—With a short account of each element and its principal compounds; source, manufacture and properties of such compounds as are used in paper making.

PART II.

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CHAPTER II.—**Fibres.** Cellulose in its relations to the plant; the vegetable cell; the cell wall; changes which occur in the cell wall; lignin or incrusting matter; its chemical properties; characteristic markings of the cell wall in different fibres; characteristic cells other than fibres in different pulps. Classification of fibres: 1. Seed hairs; cotton, chemical and physical character of fibre, dimensions, analyses. 2. Bast fibres, as linen, jute, hemp, manilla, rhea, ramie, agave, sisal, adansonia, &c.; occurrence in plant, separation of filaments; character, size, distinguishing features of filaments and ultimate fibres, analyses and chemical properties. 3. Fibres and other cells from whole stems and leaves, as straw, esparto, bamboo; measurements and characteristics of fibres, yields, analyses; characteristic cells found with fibres. 4. Wood fibres; growth of wood; cambium layer; spring and autumn wood; sap and heart wood; resins; bark and knots; analyses of woods; specific gravities; ash; fuel values; occurrence and character of all woods used for pulp making.

CHAPTER III.—**Processes for Isolating Cellulose.** Rag boiling; special treatments for various fibres, as jute, straw, esparto; review of miscellaneous processes for treating wood; the water process, aqua regia, &c.; the soda process, history; preparation of liquors, boiling, washing, recovery, sources of loss; analyses of chemicals and liquors; the sulphite process, history; general principles; the different systems; liquor apparatus; preparation and analyses of liquors; digesters; linings; boiling; subsequent treatment of pulp; waste liquors; recovery. The sulphide and sulphate processes.

CHAPTER IV.—**Bleaching.** General principles; bleaching agents; bleaching powder; deterioration; analyses; preparation of bleach liquors; use in chests, engines, drainers; hot bleaching; acid bleaching; use of alum; chlorination and oxidation of fibre; washing stock, antichlors; loss in bleaching; ozone bleach; hydrogen peroxide; permanganate; sulphurous acid; special processes for various fibres.

CHAPTER V.—**Sizing and Loading.** Rosin; preparation of size; free alkali; free rosin; alum; analyses of alums; free acid; basic alums; sizing power; resinate of alumina; moss; casein; wax; starch; animal sizing; preparation and use; drying; loading; analyses of clays, agalite, pearl hardening, &c.; use; retention; ash; combined water; effect of alum and starch.

CHAPTER VI.—**Coloring.** Mineral colors; vegetable and animal colors; aniline colors; chemical properties; effect of alum and traces of bleach or alkali in different colors; distinguishing tests; effect of different waters.

CHAPTER VII.—**Water and Water Supply.** Character and analyses of different waters; ground waters; surface waters; river water; artesian well water; hard and soft waters; boiler scale; effect of waters on size and colors; various systems of filtration; use of alum; softening water; self purification of streams; natural filtration; effect of storage; vegetation in ponds; crenothrix; consumption of bleach by waters.

CHAPTER VIII.—**Chemical Analysis.** Description of apparatus and methods for testing the purity and strength of all paper making chemicals, colors, &c.; common impurities and adulterants given; full description of methods of analysis for sulphite and soda liquors, bleach solution, alums, &c.

CHAPTER IX.—**Paper Testing.** Full account of the latest German methods for testing and classifying papers; determination of ash; kind of sizing; amount of sizing; free acid and chlorides; strength; proportion of ground wood; kind and condition of fibres.

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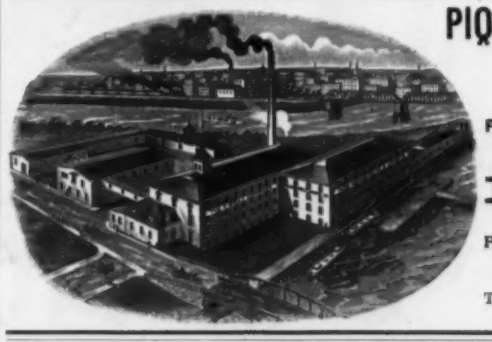

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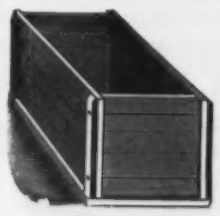

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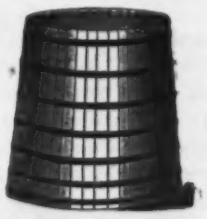

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toasts of Governor McKinley, M. E. Ingalls, Colonel Brice, Senator Sherman and other notables at Cleveland the other day. The Dayton contingent was taken to Cleveland in a special train of Pullman palace cars and received special recognition from the host, who entertained a thousand of the Buckeye's strongest business followers. The paper trade, as usual, exercised its influence. Capt. E. Morgan Wood, of the Dayton Globe Iron Works, responded to a toast while the entire party was on board a lake steamer, while E. E. Thresher was accorded a similar honor about the festal boards at the evening gathering. Clustered in one corner of the banquet room were W. P. Callahan, owner of the Levis Paper Mill; L. A. Reynolds and W. E. Crume, of the Crume & Sefton Paper Company; E. B. Weston, of the Weston Paper and Manufacturing Company; Captain Wood, and A. A. Simonds.

Local papers contained a report of an alleged strike among the teamsters of the American Straw Board Company this week, claiming that the drivers refused to haul lime during the torrid weather. Investigation proved the falsity of the rumor. The difficulty was of a trifling nature, and upon the face of it was not susceptible of any enlargement. Everything is moving peaceably at the Aqueduct mills.

In the case of the Haldeman Paper Company, of Amanda, against the American Straw Board Company, on trial before Judge Hammon in the United States Circuit Court in Cincinnati this week, the jury has returned a verdict in favor of the plaintiff in the sum of $3,500 for damages and $7,156.25 for purchase money, while on the defendant's cross-claim it awarded to the latter the sum of $4,450 for rental.

It will be recalled that damages in the sum of $41,250 were asked. A full explanation of the suit appeared in these columns at the time, a statement from the American Company's general attorney accompanying the same. The defendants are the owners of the Rockdale Paper Mills, which are located north of Hamilton.

An alarm of fire from box 16, corner of First and Foundry streets, followed by a succession of alarms, called out nearly the entire fire department the other afternoon. A small fire in the rag department of the Levis paper mill on Monument avenue was the cause; loss, inconsequential.

Referring to the intense interest which the paper trade evidences in the national sport in last week's correspondence prompts a reminiscence worthy of mention. If there are 100,000 "fans" and "rooters" in the Miami Valley every one to a man is aware that West Carrollton's paper mills support—or did in their palmy baseball days—one of the staunchest amateur teams in the country. In short, the personnel of the club smacked of familiar names of vanquished ex-professional players, who won the day in all contests on the diamond. For years they held undisputed sway until defeat once so deeply enthralled them that they have scarcely yet recovered from the shock.

This took place a number of years ago, and was under humiliating circumstances, as the winners constituted a club in a bucolic but classic territory, and were known as the West Alexandria "Hustlers." The latter simply wiped the diamond with the paper mill ball tossers, and the disappointment was every whit as bitter as when Casey struck out before the Mudville "fans." Dan Daub, now in the box with the Brooklyns, was then serving the West Carrolltons in the same capacity, and his look of pity was really distressing. The writer was detailed by a Dayton paper to "cover" the event, and although the manager of the defeated club appeared before him in company with Daub to plead for an "easy let down," the Carrolltons were doomed to read two columns of double leaded satire, topped off with a head which at the present time would make an average up-to-date contemporary "shake in its boots."

Your correspondent during his boyhood days was a member of the suburban club which walloped the Carrollton "Kings," and has never before divulged the fact that most of West Alex's ball players were professionals from the Philadelphia League team in disguise.

There are several of Carrollton's players now in the National League clubs and not one of them—mark this!—will ever forget the Waterloo of their lives.

Salesman Gilson, formerly with the National Folding Box Company, of Chicago, is now in the East in behalf of the Aull Brothers Company.

The Reynolds & Reynolds Company's tablet works were closed on Saturday afternoon to afford the employees an opportunity of attending the races—horse and cycle—or of enjoying any pleasure desired.

Black & Clawson, paper mill machinery manufacturers, are in receipt of a large order for all of the paper mill machinery of a large manufactory, under the supervision of Muller Brothers, at St. Joseph, Mo. There was a number of competing bids, and the order comes as an unusual compliment. M. V.

WESTERN NEW YORK.

[FROM OUR REGULAR CORRESPONDENT.]

NIAGARA FALLS, N. Y., June 13, 1895.

While other parts of the country and large paper and pulp making sections are complaining of a drought, there is plenty of water here to run all of the mills, and there is no let up. That is one reason why Niagara Falls is one of the best places in the world to locate a paper or pulp mill.

Superintendent Frank Bootz, of the Cliff Paper Mill, was the recipient of a very handsome watch charm from his employees on Wednesday last. It was in the form of a Masonic emblem of the Knights Templar design. Wednesday was Mr. Bootz's birthday, and his men took this occasion to show their regard for him.

J. A. Swinarton, of Chicago, general manager of the American Straw Board Company, with O. A. Jay, of Kokomo, Ind., were at the Cataract House here this week for a day on their way East. Mr. Swinarton is quite hopeful of an increasing trade from now on.

The Niagara Falls Paper Company is putting its mill into fine shape with the two new machines which the Bagley & Sewall people set up. The output will now be greatly increased and mount up to 80 to 100 tons a day when all of the machines are run to their highest capacity.

The Lockport Pulp Company, at Lockport, was compelled some time ago to make a reduction in its men's wages. The consequence is that now when business has picked up the management restores the old scale, and the men are happy and have weathered the hard times quite well.

It seems that the State has not got rid of the claims for damages for drawing off the water in Skaneateles Lake to feed the canal, thereby depriving the mill owners of their water power. The Hart Lot Paper Company has filed a claim of $4,101, and will press it for payment at the next meeting of the State Board of Claims.

John A. Merritt, of the Niagara Paper Company, Lockport, is never tired of sounding the praises of the company's superintendent, Mr. Ryan, who devised the popular "Sponge Crepon," which is having such a remarkable run for ladies' dress linings. The shipments of this product to Europe have been enormous. W. E. T.

HOLYOKE.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., June 13, 1895.

The dull season in the paper trade is at hand, and from now until fall the movement of finished goods will be reduced to the minimum.

It does not naturally follow that manufacturers of paper will lie on their oars, but at this season of the year orders are reduced in number and size, and no one buys any more than is actually needed.

It is a little early to predict much as regards the fall trade, but it can be truthfully said that there is à much more hopeful feeling in this direction than was evidenced a year ago.

The movement of fine writings and book papers this week has been fully up to last season's record, and some mills have seen more goods go out than was the case one year ago. There has been no change in prices.

W. A. Castle, the Springfield paper stock dealer, has had a writ of attachment issued against the Springdale Paper Company, of Westfield, for $20,948 to cover a bill for rags delivered to the company. In speaking of the matter yesterday H. H. Bowerman, of the company, said that the trouble between his company and Mr. Castle had been brewing for some time, it being caused by a sale of some rags, for which the price was exorbitant.

The company refused to take one consignment of the rags and declined to settle Mr. Castle's claim until it was reduced. The latter did not see fit to give any rebate, and, as both parties to the transaction remained firm, the attachment was the outcome of the trouble.

E. C. Rogers, of the Massasoit Paper Manufacturing Company; Ex-Lieutenant-Governor Byron Weston, of Dalton, and H. J. Rice, of Bradner Smith & Co., Chicago, will leave for Europe soon on an extended trip.

The Holyoke Paper Company has just made this corporation return of its affairs: Fixed capital, $500,000; capital paid in, $500,000. Assets—Land and water power, $279,000; machinery, $246,000; cash and debts receivable, $129,104; manufactures and merchandise, $113,964; total, $768,068. Liabilities—Capital stock, $500,000; debts, $135,523; profit and loss and surplus, $132,544; total, 768,068.

John La Fortune was the victim of a bad accident this week. He was lighting the fires in a furnace when the draft forced the flames outward and the man's clothing was instantly in a blaze. His hands, arms, face and breast were so badly burned that the skin peeled off in places. It is feared that he cannot recover, his injuries are so serious.

James Ball, formerly superintendent of the Holyoke Envelope Company's mill, who went to Europe two years ago, writes to his friends in this city that he is managing director of the British Envelope Company, Limited, which has a capital of $100,000. This company was organized through the efforts of Mr. Ball, and it controls his valuable patents on envelope manufacturing machinery. The company expects to begin business about September 1.

The Holyoke Co-operative Bank held its annual meeting last night, and among the officers elected were J. W. Moore, of the Whiting Paper Company, president; and among the directors are E. A. Bardwell, of the Newton Paper Company; C. P. Randall, of the Parsons Paper Company, and J. S. Lassiter, of the National Blank Book Company. This is one of our most popular institutions for savings.

J. D. Thompson, who was so badly injured recently at the Norman Paper Company's mill, is yet in very bad shape and it will be some time before he can recover.

Thomas Dowd, who had his foot badly crushed by an elevator at the Whitcomb Mill, not long ago, was obliged to have his leg amputated between the ankle and knee one day this week.

A. T. Ramage, of the Franklin Paper Company, has gone to Monroe Bridge to take charge of the manufacturing department of the James Ramage Paper Company during the absence of the superintendent on a European trip.

Judge Brothers have just occupied their new quarters in Craft's Block, on High street. H.

NORTHERN NEW YORK.

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., June 14, 1895.

The pulp and paper manufacturers are not always happy men. When low prices do not make them feel blue it is low water. That is just now the bugbear to all of the mills along the Black River. The water in the river is now the lowest it has ever been so early in the season. There is absolutely no current in the river from Whittlesey's Point to the dam at the Taggart Brothers Company's paper mill, and the water stands apparently motionless. No water is flowing over the dam above the suspension bridge and everything is as stagnant as a mill pond. Unless the river rises all classes of manufactories dependent upon it for water power will be silent and their wheels will be shut down. The paper mills have already experienced much difficulty in keeping running, and some of them have to shut down part of the time. Manufacturers are earnestly praying for rain.

An interesting fight is in progress between the De Camps, of New York, who own valuable forest preserves along the Moose River, and the lumbering men and pulp wood drivers, restrain the latter from using the Moose River to float lumber and pulp wood down the river. The De Camps have blockaded the stream by piling into it a large number of cedar posts and putting beams across it. One lumber company ordered its men to remove these obstructions, and it was feared that a shotgun policy would result. The Moose River Lumber Company, however, cleaned out the river, and the lumber and logs have been floated down under protest. Both sides have gone into the courts.

There is quite a difference between the condition of the affairs of the Wendler Machine Company now and when they went into the hands of a receiver some time ago. Frank A. Sherman, who secured a lease from the receiver, Patrick Phillips, has charge of the works. Owing to his wise management a change has already taken place in the prospects of the concern. The force is now kept employed all of the time and is compelled to work overtime some days to keep up with the orders.

The Bagley & Sewall Company is now busy on four orders for paper machines.

The addition to the mill of the Outterson Paper Company at Brownville has been completed and the interior is fast being fitted up. The stonework for the new paper machine is completed and the machine is being set up.

The Great Bend Paper Company has had a new roof put on its mill by the Watertown Roofing Company. These roofs are fire and water proof, and are growing very popular with the mills.

J. T. Outterson, of the Outterson Paper Company, has returned from Fort Edward, where with some other gentlemen, and on invitation of the Ticonderoga Paper and Pulp Company, he inspected the plant and made a report of necessary improvements and additions to make it a first-class modern plant. The Ticonderoga people want to have their plant second to none in the country. The other gentlemen on the committee were J. W. Wyman and W. D. Jeffers.

The Carthage *Tribune* says: "The largest pulp drive ever floated in Black River has filled the river at Carthage for the past two weeks. It comprises over 13,000,000 cords, representing an investment of over $50,000. Forty men have been at work on the drive, and a large number have been at work night and day in pushing it over the State dam here. Eight million cords are owned by the Sulphite Pulp Company, Dexter, and 5,000,000 cords belong to the Taggart Paper Company, Felts Mills. The drive was in charge of W. S. Smith, of West Carthage. The river is now clear to the State dam. Below this the drive is being walked slowly to its destination. The water is very low for this season of the year, which greatly hinders the progress of the drive."

William J. Edgars, an employee of the Remington Paper Company, lost his life in the Black River over a week ago in an effort to recover his hat. He slipped and fell in. Divers from Kingston succeeded in recovering the body, which was pinned under an iron rod attached to a beam. Edgars was thirty-one years old and unmarried. W. E. T.

THE CONTINENT OF EUROPE.

[FROM OUR REGULAR CORRESPONDENT.]

PARIS, May 28, 1895.

The present state of the manufacture of fine paper in Germany may be best judged from the results obtained in the manufacture of standard paper, and these are the more interesting as they can be stated in figures. The official report of the results obtained by German manufacturers of standard paper in 1894 has just been published, and some of the facts contained in it may prove of interest to the readers of THE PAPER TRADE JOURNAL.

At the request of the different authorities throughout the country 436 samples of standard paper were tested during the year at the Charlottenburg Institute, and 384 of these, or 88 per cent. of the total, were found to correspond to the "regulations," while fifty-two, or 12 per cent. of the total, were rejected. Among the 88 per cent. of good papers, however, there were quite a number which showed better qualities than those required of them according to their watermarks. It is impossible to give the paper exactly the strength required, and manufacturers, moreover, try to make their paper as strong as possible without using a higher grade of materials and without decreasing the capacity of the mills by slower work. Seventy-seven of the papers, or about one-sixth of the total number of accepted standard papers, have been shown to possess one whole degree more strength than is required of their class; one degree in strength usually means 1,000 metres breaking length, and thus amounts to one-fifth to one-fourth of the total strength of the paper.

Private individuals submitted eighty-one papers to the institute to be tested, with the following results: Fifty-nine of the papers, or 72.9 per cent. of the total number submitted, were found sufficient, and eight of these, or 9.9 per cent., showed greater strength than was required of them; twenty-two of the papers, or 27.1 per cent. of the total, were rejected. The proportion of accepted and rejected papers is, therefore, somewhat less favorable in this case. The degree of certainty or reliability with which the different mills succeed in producing acceptable standard papers varies greatly. As the Charlottenburg Institute knows the manufacturer of each sample of paper submitted for testing by the watermark, and keeps a strict account of all the tests, as has been already stated, it is an easy matter to ascertain the greater or less degree of certainty with which the different mills work.

Of the forty-one paper mills whose standard papers were submitted for testing during the past year only twenty-one furnished faultless papers; a few of these mills, however, had only one lot of paper tested. Of the eighteen firms which had more than ten lots of paper tested, only five succeeded in not having any rejected. One firm which submitted samples of fifteen lots of standard paper had only 20 per cent., or three lots, passed. Of the number of mills which produced faultless papers last year and had more than ten lots tested during the year, only two have been able to maintain their record so far this year.

With respect to the different standard classes, the following results appear: Of Class 1 the number of papers rejected amounted to 25 per cent of the total; the percentage of insufficient papers was larger in this class than in other classes last year. The percentage for the remaining classes was as follows: Class 2a, 16 per cent.; Class 2b, 9 per cent.; Class 3a, 13 per cent.; Class 3b, 6 per cent.; Class 4a, 17 per cent., and Class 4b, 8 per cent. It is impossible to determine from these figures which of the different standard classes is the most difficult to produce, because the number of papers tested of each class is too small, and the percentage of papers rejected from the various classes changes each year. With regard to the number of papers submitted for test, Class 3a took first place in 1894 and also in 1893 (108 in 1894 and 133 in 1893), while Class 1 showed the lowest numbers (12 in 1894 and 4 in 1893).

The defects for which the above mentioned number of papers was rejected last year were generally of a very mild order. As regards strength, breaking length in particular, the papers fell short from 4 to 510 metres; in expansion they lacked from 0.1 to 0.5 per cent., and the resistance against crumpling and rubbing was too low by 1° to 2°. In six cases the papers submitted were lacking in two of these qualities, and in five cases, in all three. As regards the composition of the papers, the defects consisted in passing the prescribed limits of ashes by from 0.2 to 3.8 per cent., or in too large a percentage of cellulose. (Papers of Class 2 must not contain more than 25 per cent. of cellulose.) Particularly conspicuous were ten rejections on account of insufficient sizing, for this is the first time that papers have been rejected by the Charlottenburg Institute for this reason. It is to be noted, furthermore, that the method employed at Charlottenburg for testing paper as to sizing cannot be called perfect by any means. Only a short time ago this question caused a lively controversy in the trade papers, and from this it appeared that, first of all, there is no reliable method for determining the degree of permeability of paper, and, second, that the opinions of different manufacturers and testing institutes diverge widely as regards the question when a paper may be called sufficiently sized. It has often happened that a paper testing laboratory pronounced a paper sufficently sized, while the consumer, or even the manufacturer himself, was of a different opinion.

Some of the other methods of testing paper are, I am sorry to say, just as unreliable as that for testing paper as to sizing. It would be entirely wrong to believe that the scientific testing of paper in Germany, as conducted at present at Charlottenburg, and taken as an example by other countries, is really in accordance with the just requirements made of paper. Of the imperfection of the scientific methods I shall speak in detail at another time. Even the way in which the results obtained in testing are applied in adjudging the quality or class of the paper would cause the American paper manufacturer to shake his head in doubt. If, for instance, a paper possesses all possible virtues, and in certain respects even surpasses the lawful demands, but shows 0.1 per cent. too much ashes, or 0.1 per cent. too little expansion, or its breaking length falls short 4 metres, it is adjudged as belonging to the next lowest class, and the manufacturer is made to suffer considerable financial loss, run the risk of injuring the reputation of his firm and have no end of trouble in disposing of the paper. I consider it nonsensical to judge the quality of paper by 0.1 per cent. of ashes or 0.1 per cent. of expansion.

Aside from the fact that such slight deviations are yet within the limits of admissible errors in testing, it has not been proved, either theoretically or practically, that, for instance, 0.1 per cent. more ashes impairs the quality of the paper. Of two papers, one of which, all other qualities being equal, contains 0.1 per cent. more ashes than the other, that with the larger percentage of ashes would be the better of the two—if so fine a distinction can be made at all—because even this increased percentage of ashes had failed to reduce the general strength of the paper. Owing to this pedantic procedure of the Charlottenburg Institute and the air of infallibility assumed by it toward all just protests, the scientific testing of paper has been greatly discredited among paper manufacturers, and the results of the scientific test are often regarded with something like pity or contempt.

Last year the Charlottenburg Institute published some reports about judging paper in which it undertook to solve scientifically certain questions which can be solved only practically, and went about it in an entirely wrong way. I select as an example a case where the institute wanted to ascertain the difference in color between two papers by means of reagents. While any paper manufacturer would have simply compared the two papers to see whether the difference in color was great enough to warrant objections, the institute tried all imaginable reagents on the paper, without knowing exactly to what end. This procedure was sharply condemned at the time, and it was proposed, in order to avoid such occurrences, to provide the Charlottenburg Institute with an advisory commission composed of practical paper makers. This proposition has been taken up by the Society of German Paper Manufacturers, and

is now one of the principal demands of that society with regard to the question of standard papers.

Another feature of the programme of this year's convention is the "creation of a board of appeals" to the Charlottenburg Institute. This board is to decide doubtful cases, and to determine whether a lot of paper objected to by the institute is to be rejected or not.

On June 6 the convention of the Society of German Cellulose Manufacturers will be held at Dresden; on the following day the Central Union of German Wood Pulp Manufacturers will meet in the same city, and on June 8 the Society of German Paper Manufacturers will hold its convention there, as stated in my last letter, so that the representatives of the entire German paper industry will be assembled at Dresden during those three days.

It cannot be denied that a decided improvement has been noticeable lately in the paper industry, and this has also had its effect on the cellulose industry. This improvement of the market is apt to last some time, as it is being greatly assisted by the operation of the Sunday law in Germany and Austria, which has caused a considerable reduction of production. Unfortunately, however, the world's yearly production of paper increases altogether too fast. It may be said that during 1894 some fifty large paper machines have been erected in different parts of the world, thus increasing the production about 50,000,000 kilograms. Although a large number of these machines were set up in America, Europe, particularly the Continent, has had its share of new paper mills to record. New mills are constantly being built in Russia, and the machines for these are furnished mostly by Germany. There are good prospects, anyway, for the manufacture of paper in Russia; as an example it may be cited that fine French cigarette paper is being imported at 4 to 4.50 frs. per kilogram, to which 2.30 frs. import duties per kilogram must be added. Such prices afford large profits.

Two Englishmen, Benjamin Cawthorn and James P. Cornett, have obtained a United States patent for a washing and bleaching engine which has been in operation three years in the Veendam straw pulp mill, and which was built by the Sürth Machine Works, in Sürth, near Cologne.

In Hungary a straw pulp mill is being built at present with all necessary arrangements for electric bleaching according to the latest patents of Dr. Kellner.

The Schlöglmühl Paper Mill, which produced 7,652,000 kilogs. of paper in 1894, has declared a dividend of 5½ per cent. The Leykam-Josefsthal Paper Manufacturing Company, with a production of 16,223,800 kilogs. of paper, 12,006,300 kilogs. of cellulose, 1,251,800 kilogs. of straw pulp and 6,746,500 kilogs. of wood pulp, has distributed 6 florins per share of 200 florins. The Elbmühl Paper Mill, which in 1894 with three paper machines produced 3,321,900 kilogs. of paper, has paid a dividend of 5½ per cent., while in 1893 it failed to pay any dividend.

On May 25 the convention of the Society of French Paper Manufacturers took place in this city, and in my next letter I shall report some of the proceedings.

PAPER MAKER.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; T. D., trust deed, and Real, a mortgage on real estate.]

EASTERN STATES.

Mortgagor.	*Amount.*
Pinlay Paper Company, Newton, Mass	$7,046

MIDDLE STATES.

L. Gibb, Jr., New York city (B. S.)	400
Silas Sager, New York city (B. S.)	512

WESTERN STATES.

C. D. Branson, Long Beach, Cal. (B. S.)	1,200
W. R. Cherry, Red Oak, Ia	—
John S. Gilmore, Fredonia, Kan. (Real)	1,300
J. H. Padgett, Salina, Kan.	132
John J. E. Linton & Co., Detroit, Mich.	775
David Adams, Duluth, Minn. (B. S.)	500
Robert R. Forward, Duluth, Minn.	500
W. E. Towne, Minneapolis, Minn. (B. S.)	500
Edward P. Walker, Omaha, Neb. (B. S.)	1,400
Kasimir Neumann, Milwaukee, Wis.	300

SOUTHERN STATES.

Wm. A. Post, Kansas City, Mo. (T. D.)	348
Charles Weill, Kansas City, Mo. (T. D.)	10,000
Chas. & L. C. Lohman, St. Louis, Mo.	650
Chas. & L. C. Lohman, St. Louis, Mo.	412

LIENS DISCHARGED.

C. A. Charles, Hartley, Ia.	170
John D. Monroe, Fall River, Mass.	3,000
Oshkosh Trade and Labor Council, Oshkosh, Wis.	300

The Ives & Williams Company was elected a member of the Stationers' Board of Trade at the meeting of the board of trustees on Tuesday last.

New Inventions—LXXXII.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY GEO. DAMON RICE.

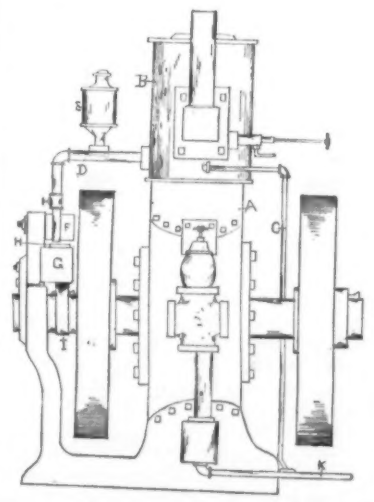
A thoroughly brittle substance never would work well against plate glass. Hence an observer will notice that the numerous plate glass windows decorated with enameled letters in all commercial centres are more or less defaced by one, and sometimes two, of the letters being gone, or perhaps broken. Skilled men apply the letters to the plate glass and use great care and judgment, and employ the best adhering cements to form a substantial union, yet the elements affect this in time, and a letter drops off, or becomes so loose that a mischievous boy can readily appropriate it. Manufacturers of enameled letters for plate glass signs are at a great disadvantage owing to the fact that the letters cannot be firmly attached to the smooth surface of the glass. One maker of these letters states that his business was seriously handicapped about a year ago, owing to the fad which then prevailed for collecting enameled letters. Students and others took pride in exhibiting a series of letters taken from plate glass fronts during the night. A few minutes' work with a chisel easily removes a letter, yet these enameled letters are very attractive, neat, easy to read, and an ornament to any show window. These facts have been noticed and considered by paper pulp men, with the result that to-day there is in vogue a method by which thoroughly whitened or bleached pulp may possibly be used as a substitute for china, clay, glass, &c., in the production of enameled letters for display signs on the front windows of business houses.

The chief features of pulp for this purpose are its elasticity, flexibility and affinity for the exceedingly smooth plate glass. Unless the alignment is perfect in uniting two brittle substances one loosens from the other immediately. If one of the substances is pliable, however, like pulp, the one blends with the other, and no fracture occurs in case of the glass settling, warping or bulging out, as often happens under varying temperatures.

In the process of manufacturing letters from wood fibre, the wood is first reduced to pulp, the fibre is impregnated with vitriol, sublimate and a suitable agglomerant, having pure white lead as its base. It is well worked and then bleached by the new process of the decomposition of salt solutions, whereby the chlorine is liberated by an electric current. A series of plates are made of copper, covered on one side with platinum foil, and the other side of each plate is amalgamated with mercury. Each plate is insulated separately by means of vulcanite covered rods of glass, and the liquid circulates between. These electrodes are suspended in a vat filled with salt solution, and the pulp to be bleached is passed over cylinders between the plates, resulting in thorough whitening.

Now the pulp is ready for the letter forming engine, a view of which is exhibited in the diagram. The pulp is put into the tank B, and the ingredients are introduced during the operation through the pipe C, consisting of coloring, softening and embossing materials. The feed pipe K also injects a portion of this material into J, where a connection is formed to receive certain quantities into the large chamber A, in which a composition derived from gutta percha is retained and supplied in small proportions to the main tank B. The shaft and large balance wheels are driven by belts, and a steady motion results for the letter former at G, and for the manipulation of the propellers and mixers inside of the chamber A. As the pulp passes from the tank through the pipe D olive oil from E drops lightly into it, lubricating it.

There is a letter mold at H, and the pulp runs into this, is heated and quickly rendered dry by the employment of steam heat at the right point, and is subjected to great pressure through the action of the cam I which is keyed to the main wheel shaft, and raises the table G, on which is the letter mold H, the top piece, F, forming a resistance. A letter is produced at each revolution of the engine. The speed is quite high, so that the letters are automatically produced with considerable rapidity. As fast as formed a device operates beneath the mold and casts out the finished letter.

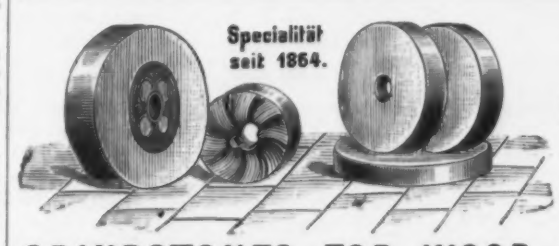


WORKING MODEL OF ENGINE FOR SHAPING PULP LETTERS.

After the pulp is shaped into letters of the desired size and character they are treated chemically so as to harden and toughen them. By variations of the chemical treatment the letters can be made to resist the action of oils as well as of water. After going through this stage in the process the letters are trimmed at their edges to remove any roughness and are decorated in imitation of oak, walnut, maple, cherry, or as is principally intended, treated with a ceramic or Japanese enamel finish, the latter being in all respects very like the regular enameled letters now in use. Of course the embossed and otherwise decorated letters in imitation of fancy woods are for interior signs, whereas the enameled ones are for exterior use, being qualified to resist rains.

If weight counts for anything, the pulp letters stand ahead of the regular kind, as they weigh very little indeed as compared with enameled pottery material. It is claimed that when the pulp letters are cemented to plate glass they are immovable, except a certain chemical is applied to dissolve the cement. Thus are the relic crank and the small boy defied, for even they would not care to tinker at a letter which can be removed only in chips. Estimates of comparative cost are not given out at present, but it is intimated that the pulp letters can be made for considerably less than the kind now in general use. The model illustrated has been reconstructed from a model built originally for an engine, hence its resemblance to an engine, for the experimenters used the same materials, wheels, stands, cylinder and all.

An asbestos packed plug cock is the best for a blow-off cock on a steam boiler. When you get one of them, never turn it clear around, but turn it one way to open and then turn back again to shut. Some of them are so made that they cannot be used otherwise.



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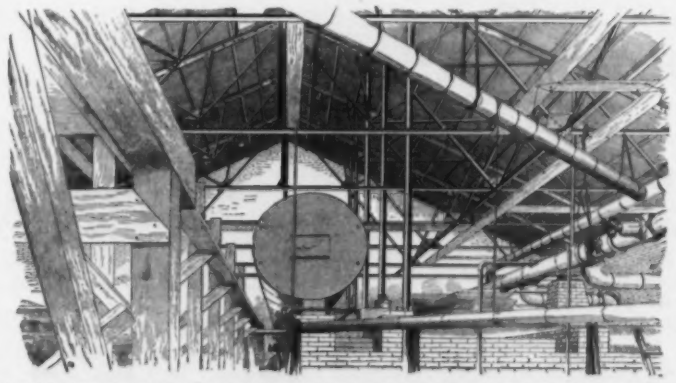
IRON TRUSS ROOF FOR THE ORONO PULP AND PAPER CO., AT BANGOR, ME.
The above illustration is taken direct from a photograph, and shows the construction of an Iron Truss Roof designed and built by us for the Orono Pulp and Paper Co., at Bangor, Me. The building is used as a boiler room, where the danger from sparks is very great, especially where wood is used for fuel. The trusses, purlins and covering are entirely of iron, no woodwork being used about the building in any way, shape or manner, so that the building is absolutely fireproof.
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IMPORTS AT NEW YORK.

FOR THE WEEK ENDED JUNE 7, 1895.

An. Colors..	759	$50,012	Paper.....	718	$280,59
Alum.....	225	608	Steel Pens..	2	90
Alum's Cake	—	—	Stationery.	5	183
Bl. Powders	760	11,379	SlatePencils	178	1,152
Soda Ash...	3,454	6,693	Clay.....	—	109
Soda, Caus.	670	7,883	J'te B'ts,&c.	33,959	95,001
Soda, Sal....	1,099	1,731	P.Hangings	45	3,403
Soda, Hypo.	30	193	Pap'r Stock	—	—
Ultramarine	75	2,157	TerraAlba.	—	—
Books.....	267	29,786	Waste.....	55	9,199
Newspapers	204	8,111	Wood Pulp	671	5,198
Engravings.	68	3,084			
Ink.....	9	497			
Lead Pencils	9	2,473	Totals...	45,202	265,931

Imports General Merchandise for the week ended June 7, 1895..... $9,067,373

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO JUNE 11, 1895.

Whence Imported.	*Rags.*	*Old Paper.*	*Chemical Fibre.*	*Ground Wood.*	*Manilla Stock.*
	Bales.	Bales.	Tons.	Tons.	Bales.
Alexandria...	685	....	....	....	....
Antwerp.....	2,129	5	928	....	9,892
Bordeaux.....	181	....	....	....	850
Bremen.....	1,342	725	2	....	2,668
Bristol.....	....	...	....	....	2,293
Buenos Ayres.	520	....	....	....	....
Calcutta.....	....	...	....	....	5,471
Cen. America.	180	....	....	....	....
Christiania....	....	....	85	....	....
Copenhagen..	...	....	105	....	1,435
Dundee.....	....	....	1	....	613
Fiume.....	....	....	34	....	....
Geestemunde.	412	....	....	....	537
Genoa.....	998	....	....	....	2,871
Ghent.....	90	40	....	....	395
Glasgow.....	140	53	....	....	49
Hamburg.....	6,085	229	1,307	....	1,348
Havre.....	....	....	....	....	883
Hiogo..... ...	6,544	....	....	....	....
Hull.....	2,750	40	1,816	....	4,822
Kobe.....	10,578	....	....	....	....
Leghorn.....	1,251	....	....	....	185
Liverpool.....	667	195	....	....	9,190
London.....	2,908	1,886	....	....	4,819
Marseilles....	155	....	30	....	1,597
Newcastle....	....	221	....	....	2,454
Rosario.....	....	....	....	....	98
Rotterdam....	1,901	....	67	....	1,376
Stettin.....	557	....	86	....	1,032
Trieste.....	128	....	45	....	....

NEW YORK IMPORTS.

FROM JUNE 5 TO JUNE 12, 1895.

Paper Stock.

Castle & Gottheil, Noordland, Antwerp, 25 tons chemical fibre.
J. W. Mason & Co., by same, 133 bs. manillas.
Perkins, Goodwin & Co., Margarethe, Bremen, 151 bs. rags.
James Pirnie, by same, 80 bs. bagging.
F. Salomon & Co., Atlantic, Bremen, 159 bs. rags, 267 bs. bagging.
Perkins, Goodwin & Co., by same, 211 bs. rags.
J. W. Mason & Co., Chicago City, Bristol, 164 bs. manillas.
Horace Dutton & Co., by same, 396 bs. manillas.
H. O. Bateman, Patria, Hamburg, 30 tons chemical fibre.
F. Salomon & Co. Taormina, Hamburg, 95 bs. rags.
Train, Smith & Co., Phœnicia, Hamburg, 117 bs. rags.
F. Salomon & Co., by same, 114 bs. rags.
Train, Smith & Co., La Touraine, Havre, 101 bs. manillas.
Castle & Gottheil, Colorado, Hull, 144 bs. rags.
Train, Smith & Co., America, London, 17 bs. rags, 122 bs. bagging.
R. F. Downing & Co., by same, 50 bs. rags.
R. H. Overton & Son, Mobile, London, 75 bs. papers.
G. Stratford, by same, 64 bs. papers.
James Pirnie, Francisco, Newcastle, 157 bs. bagging.
Jessup & Moore Paper Company, by same, 130 bs. bagging.
Train, Smith & Co., Edam, Rotterdam, 140 bs. bagging.
James Pirnie, by same, 115 bs. bagging.

Paper.

G. B. Hurd & Co., Nomadic, Liverpool, 18 cs.
Marcus Mayer & Co., Noordland, Antwerp, 2 cs.
Oscar F. Melvin, by same, 1 cs.
L. C. Wagner, by same, 5 cs.
Wirths & Co., by same, 3 cs.
Kupfer Brothers, by same, 5 cs.
E. G. Soltmann, by same, 3 cs.
C. S. Abbott & Co., by same, 23 cs.
G. Gennert, by same, 1 cs.
Vernon Brothers & Co., Britannic, Liverpool, 6 cs.
W. H. S. Lloyd, New York, London, 3 cs.
L. De Jonge & Co., Phœnician, Hamburg, 57 cs.
Dingelstedt & Co., by same, 19 cs.
American Tobacco Company, La Touraine, Havre, 10 cs.
J. C. Drucklieb & Co., by same, 10 cs.
J. Glenn & Co., Mobile, London, 29 cs.
Dennison Manufacturing Company, by same, 166 cs.
American Trading Company, by same, 3 cs.
M. Adler, Obdam, Rotterdam, 2 cs.
E. & H. T. Anthony & Co., by same, 2 cs.

BOSTON IMPORTS.

FROM JUNE 6 TO JUNE 12, 1895, INCLUSIVE.

Paper, &c.

Wm. Guild & Co., Pavonia, Liverpool, 5 bs. periodicals.
G. Bowden & Son, by same, 6 cs. tissue paper.
Dennison Manufacturing Company, Ottoman, Liverpool, 10 pkgs. tissue paper.
Carter, Rice & Co., Barremore, London, 2 cs. paper.
W. A. Nosworthy, Borderer, London, 33 cs. paper.

Paper Stock.

Train, Smith & Co., Sylvania, Liverpool, 334 bs. rags, 308 bs. waste papers, 104 bs. manillas.
Train, Smith & Co., Borderer, London, 374 bs. waste paper.
C. A. Cheney, by same, 38 bs. waste paper.
E. P. True, by same, 149 coils manillas.
Horace Dutton & Co., by same, 383 coils manillas, 85 bs. waste paper.
Crocker, Burbank & Co., by same, 358 bs. waste paper.
Wheelwright Paper Company, by same, 185 bs. waste paper.
Atterbury Brothers, by same, 48 bs. waste paper.
Byron Weston Paper Company, by same, 5 bs. rags.
C. P. Sumner & Co., by same, 53 bs. waste paper.
F. R. Walker & Co., by same, 11 bs. waste paper.
Train, Smith & Co., Barremore, Liverpool, 10 bs. rags.
Horace Dutton & Co., by same, 38 bs. rags.
R. H. Overton & Son, Ottoman, Liverpool, 42 bs. manillas.
Horace Dutton & Co., by same, 194 coils manillas.
W. N. Proctor & Co., by same, 13 bs. rags.
W. N. Proctor & Co., Michigan, Liverpool, 54 bs. rags.
C. A. Cheney, by same, 47 bs. rags, 109 bs. manillas, 70 bs. waste paper.
R. H. Overton & Son, by same, 178 bs. manillas.
Wheelwright Paper Company, by same, 40 bs. waste paper.
Horace Dutton & Co., Norseman, Liverpool, 8 bs. and 81 coils manillas.
C. A. Cheney, Columbian, Liverpool, 28 bs. rags.
T. F. Ring, Georgian, Liverpool, 42 bs. waste paper.

Sizing.

Train, Smith & Co., Ottoman, Liverpool, 430 bags.
C. A. Cheney, by same, 98 bags.
Baeder, Adamson & Co., by same, 170 bags.
E. M. McClintock, Pavonia, Liverpool, 137 bags.
C. A. Cheney, Michigan, Liverpool, 554 bags.

Bleaching Powder.

J. L. & D. S. Riker, Ottoman, Liverpool, 43 cks.
J. L. & D. S. Riker, Michigan, Liverpool, 312 cks.
J. L. & D. S. Riker, Norseman, Liverpool, 223 cks.
Bowman, Thompson & Co., Georgian, Liverpool, 30 cks.
Bowman, Thompson & Co., Pavonia, Liverpool, 78 cks.

Caustic Soda.

Edward Hill, Sons & Co., Georgian, Liverpool, 50 drums.

Refined Alkali.

J. L. & D. S. Riker, Ottoman, Liverpool, 90 cks.

Soda Ash.

Warren & Co., Ottoman, Liverpool, 100 bags.
Wing & Evans, by same, 25 cks. and 80 bags.
A. Klipstein & Co., by same, 25 cks. and 100 bags.
Warren & Co., Michigan, Liverpool, 31 cks.
Churchman & Co., by same, 17 cks.
Warren & Co., Norseman, Liverpool, 75 cks.
Wing & Evans, by same, 53 cks.
Morey & Co., Columbian, Liverpool, 13 cks.
Wing & Evans, by same, 27 cks. and 400 bags.
Wing & Evans, Georgian, Liverpool, 64 cks. and 1,200 bags.
Bowman, Thompson & Co., by same, 56 cks.

Soda Crystals.

Warren & Co., Norseman, Liverpool, 140 bbls.
Warren & Co., Michigan, Liverpool, 700 bbls.
Warren & Co., Ottoman, Liverpool, 140 bbls.

Crude Sulphur.

Linder & Meyer, Columbian, Liverpool, 2,002 bags.
Linder & Meyer, Georgian, Liverpool, 2,337 bags.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED JUNE 8, 1895.

Paper.

Wm. Mann Company, Russia, Hamburg, 14 cs.
Chas. Beck Paper Company, by same, 63 cs.

Paper Stock.

Jessup & Moore Paper Company, Assyrian, Glasgow, 127 bs. jute thread waste.
Heidelbach, Ickelheimer & Co., by same, 100 bs. bagging.
Order, by same, 390 bs. old bagging.
Order, Indiana, Liverpool, 37 bs. old paper.

Soda Ash.

Brown Brothers & Co, Indiana, Liverpool, 1,367 bags and 32 cks.
Order, by same, 188 cks., 385 tcs. and 472 bags.

Caustic Soda.

E. Hill's Sons & Co., Assyrian, Glasgow, 250 drums.
James Lee & Co., by same, 25 drums.
Order, Indiana, Liverpool, 85 drums.

Soda Crystals.

J. I. Keefe, Indiana, Liverpool, 280 bbls.

Bleaching Powder.

J. L. & D. S. Riker, Assyrian, Glasgow, 30 tcs. and 50 cks.

Bichromate of Potash.

J. L. & D. S. Riker, Assyrian, Glasgow, 30 cks.

Salt Cake.

Order, Indiana, Liverpool, 1,400 bags.

China Clay.

J. B. Moors & Co., Assyrian, Glasgow, 140 cks.
Order, by same, 200 cks.
Same, Indiana, Liverpool, 116 cks.

EXPORTS of Paper, &c., from New York for the Week Ended June 11, 1895.

BOOKS, to Argentine Republic, 6 cs.; Amsterdam, 3 cs.; British Guiana, 1 cs.; British Australasia, 7 cs.; British East Indies, 13 cs.; British West Indies, 67 cs.; Chili, 1 cs.; Ecuador, 1 cs.; London, 56 cs.; Havre, 9 cs.; Liverpool, 15 cs.; Mexico, 3 cs.; Leipsic, 2 cs.; New Zealand, 9 cs.; Rotterdam, 5 cs.; Southampton, 11 cs.; Venezuela, 2 pkgs.

PAPER, to New Zealand, 35 cs.; Rotterdam, 1 cs.; Antwerp, 40 cs.; Brazil, 1 cs.; Bremen, 1 cs.; Argentine Republic, 1 pkg.; Bolton, 3 cs.; Bristol, 5 cs.; British Australasia, 469 pkgs.; Chili, 189 pkgs.; British West Indies, 957 pkgs.; Christiania, 74 cs.; Cuba, 132 pkgs.; Central America, 74 pkgs.; Dutch West Indies, 9 pkgs.; Havre, 4 cs.; Hull, 1 cs.; Hamburg, 26 cs.; Hayti, 18 pkgs.; London, 251 cs.; Mexico, 54 pkgs.; Porto Rico, 452 pkgs.; Colombia, 64 pkgs.; San Domingo, 1 pkg.; Venezuela, 74 pkgs.

STATIONERY, cases, to Hayti, 2; Liverpool, 1; Argentine Republic, 20; Brazil, 1; Bremen, 5; British Australasia, 7; Bilboa, 1; Bolivia, 1; British Honduras, 1; Berlin, 1; Canary Islands, 1; British West Indies, 9; Constantinople, 5; Chili, 10; Cuba, 22; Central America, 10; Dutch West Indies, 9; Ecuador, 6; Florence, 1; Geneva, 1; Havre, 12; Hamburg, 2; Colombia, 12; London, 50; Mexico, 13; Peru, 10; Porto Rico, 10; Rotterdam, 5; Southampton, 4; Venezuela, 12.

SANDPAPER, to London, 116 bs.; Porto Rico, 2 bdls.; Argentine Republic, 37 bdls.; Brussels, 13 cs.; Chili, 17 pkgs.; Cuba, 7 pkgs.; Hamburg, 2 bdls.; Central America, 1 bdl.; Hull, 8 cs.; Lodz, 1 cs.; Uruguay, 2 cs.

TWINE, to Hamburg, 45 bags; Liverpool, 225 bags; Argentine Republic, 20 bdls.; Bristol, 179 bags; British West Indies, 3 pkgs.; Canary Islands, 2 bbls.; Dutch West Indies, 2 bdls.; Ecuador, 6 bdls.; Glasgow, 180 bags; Hull, 57 bags; Mexico, 2 bs.; Colombia, 1 bdl.; Venezuela, 16 bs.

WALL PAPER, to British possessions in Africa, 103 bdls.; British Australasia, 2 cs.; Central America, 45 cs.; Hayti, 2 cs.; Colombia, 2 cs.

TAGS, cases, to British Australasia, 10; London, 2.

LABELS, cases, to Central America, 1.

PAPER WASTE, bundles, to Hamburg, 67.

PAPER BAGS, bundles, to Chili, 65.

NEWSPAPERS, case, to Argentine Republic, 1.

AGGREGATES AND VALUES.

Paper, reams.....	—	—
Paper, pkgs.....	2,779	$18,833
Paper, cases.....	416	7,366
Books, cases.....	212	22,745
Stationery, cases.....	217	11,337
Rosin, bbls.....	2,911	9,101
Totals.....	6,535	$69,382

Exports General Merchandise for the week ended June 11, 1895..... $7,788,182

If your main belt does not run steadily, do not be in a hurry about cutting a piece out of it, nor about sawing a larger hole where it passes through the floor, until you have good reason to be satisfied that your valves are properly set.

JUTE AND LINEN
Paper Stock.
J. & W. SMITH,
DUNDEE, Scotland.
Packers and Shippers of
Clean Jute Threads, Clean Jute Ropes, Gunny Bagging, Manilla Ropes, Bleached Linen Cuttings and Bleached Linen Threads.
ENGINE CLEANING WASTES,
Wadding Wastes,
Colored Jute Wastes Bleached Jute Wastes,
Felting Wastes and Carded Jute Tows.
OFFICES:
CALCUTTA BUILDINGS.
WORKS:
COMMERCIAL COURT.
WAREHOUSES:
EXCHANGE STREET.
DUNDEE, Scotland.

BLEACHED STRAW PULP
VEREINIGTE STROHSTOFF FABRIKEN
V S R T
DRESDEN GERMANY
MANUFACTURED IN GERMANY
H. O. BATEMAN, 206 BROADWAY, NEW YORK.

TRAIN, SMITH & CO.,
IMPORTERS OF AND DEALERS IN
—ALL DESCRIPTIONS OF—
Paper Makers' Supplies,
24 FEDERAL STREET, BOSTON.
BRANCH OFFICES: 140 NASSAU STREET, NEW YORK. 14, 16, 18 & 20 ST. MARY AXE, E. C., LONDON. EDMUND ST. CHAMBERS, LIVERPOOL.

WM. J. CORBETT & CO.,
WHOLESALE DEALERS IN AND PACKERS OF
Woolen Rags and Paper Makers' Supplies,
86, 88 & 90 COVE ST., BOSTON, MASS.
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F. BREDT & CO.,
No. 194 Fulton Street, SOLE AGENTS FOR New York City, U. S. A.
JOSEPH PORRITT & SONS'
TRADE MARK. ENGLISH FELTINGS.
ALSO IMPORTERS AND DEALERS IN
MARINE BLUE (Aniline) for News Paper Mills,
Jacketing, Roll Cloth, Double Extra Canvas, Ultramarine Blue.

GRIFFIN & LITTLE, PAPER MILL CHEMISTS,
Office and Laboratory: 103 Milk Street, Boston.
EXPERTS IN THE SULPHITE PROCESS AND ALL CHEMICAL MATTERS PERTAINING TO THE MANUFACTURE OF PULP AND PAPER.

A. WERTHEIM & CO.,
HAMBURG, GERMANY,
Exporters of all Grades of Sulphite and Soda Pulps.
SIGMUND GOLDMAN, Agent for the United States and Canada,
BENNETT BUILDING, 99 NASSAU STREET, NEW YORK.

THE ROBERT AITCHISON PERFORATED METAL CO. CHICAGO, ILL.
PERFORATED METALS FOR PAPER MILLS.

FROST STEAM PUMP
FOR PAPER MILL USE.
FROST STEAM PUMP condenses its exhaust steam and returns it with its heat to the boiler. A great saving made.
Will earn its cost in four months' use.
WE ALSO MANUFACTURE
The Moore Independent Steam Pump.
As a Boiler Feeder it has no equal.
IT HAS NO DEAD CENTRE.
Write for particulars and prices.
Union Manufacturing Co.,
BATTLE CREEK, MICH.,
SOLE MANUFACTURERS.

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ROOMS 188, 189 & 190.

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NEW YORK: SATURDAY, JUNE 13, 1895.

A NEW form of beating engine is illustrated and described on the first page of this issue of THE PAPER TRADE JOURNAL. In this machine this is a series of rolls, the stock being fed in at one end of the engine and passing under the action of the several rolls. There is an inclined movable bed plate, capable of adjustment to bring each set of bed plate knives into uniform and concurrent operation with the knives of the rolls.

WE understand that several of the contractors for supplying paper for the use of the public printing office have had their contracts cancelled, and that the paper is to be furnished by other parties. The reason for this is the alleged failure of the contractors to comply with the specifications of the contracts. Ground wood pulp is said to have been introduced into the book papers, contrary to the express stipulations of the Government. If this is true, and if the contractors have attempted to palm off an inferior, cheap and nasty product upon the Public Printer, that official was justified in rejecting the stuff and in setting aside the contracts. There has been too much evasion of obligations as between the Government and contracting parties generally, and it is time that the latter should be held to a strict, exact observance of the conditions upon which they expect to draw upon the public funds. Right here let us say we do not believe in the existing system of buying paper for Government use. Paper should be bought in open market at current rates and the purchasing business should not be so conducted as to offer a premium on fraud or to "bear" a market, even if it is in the public interest, so-called. When the Government—when anyone in fact—pursues the plan of creating competitions which results in prices below the actual value of goods, quality considered, a bid is made for inferior material, and there are always people who stand ready to put in poor material and thereby profit from such ill advised competitions. The result is injurious to the trade generally and business is demoralized, despite the fact that all who know anything about the trade are well assured that honest goods cannot be supplied at the contract price.

THE Treasury returns for the month of April show an increase of exports in stationery lines compared with the same month last year, but there is a falling off in values for the nine months to the extent of $16,216. The exports of paper and manufactures of paper, on the other hand, show a material advance, except in paper hangings, in which the decline in values for the nine months is $2,717; writing paper and envelopes increased $38,424, and all other kinds of paper $179,124, the net increase for the nine months ended with April being $214,831. This is by no means a bad showing, ruling prices considered, and it is evidence that our exports are surely, if slowly, growing. Such indications point the way to further exports and the certainty of an enlarged foreign demand which only needs to be cultivated.

THE "battle of the standards" is yet raging, the currency question being, by all odds, the most important and interesting now before the American public. It is not possible to tell as yet whether bottom has been struck in the arguments, or whether a trend toward settlement has begun. Our friends out West certainly have the advantage in the matter of lung power and verbiage, but whether, when the soberer sense of the people begins to assert itself, they will be so enthusiastic remains to be seen. Without going into the merits of the subject it seems on the surface as if the silver advocates are banking to some extent on a continuation of the depression and are ignoring the better conditions which are each day obtaining in the business world. Eighty cent wheat seems somehow to take the pith and marrow out of the free silver argument, and the 10 per cent. advance in wages, which seems likely to become a national movement, sadly weakens the force of the reasoning employed, because it was in behalf of the agriculturists and working people, or professedly so, that the tocsin of a currency war was sounded. People are apt to forget all about a theory when they encounter favorable conditions.

HOWEVER, there is a certain amount of truth in the silver argument. Silver is needed in the currency; the more we can have of it without disturbing the financial equilibrium the better. It is not that silver is not a good currency metal, or that it has really been discredited, or that there has not been enough of it coined, but that the people will not use it to any extent except as subsidiary coin. If the advocates of free silver will first get the millions of dollars now lying in the Treasury vaults into circulation, and demonstrate that there is yet a lack of silver in our circulating medium, little will be said against further coinage. Silver is the people's money; it has done, and is yet doing, yeoman's service in every currency in the world, and will continue to do so as long as its parity with gold is maintained. This, as we understand it, is all that the bi-metallists contend for, and it is a condition of our own currency to-day; that is, the Government maintains the parity of the two metals as currency, and all of our paper money is eventually redeemable in gold or silver. It may well be asked, however, if the Government can afford to undertake to sustain the parity of the metals as currency if all control of the volume of money is taken from it, as, practically, this is what the free and unlimited coinage of silver means, although its advocates carefully avoid saying so. Unless the Government acts as a responsible agent in sustaining that parity, how long would or could it be maintained?

THE Constitution explicitly lays down rules for the coinage of the money of the nation, and with those rules there are certain obligations which cannot be shirked nor taken away, although just now these facts seem to be lost to sight. It is not with the present status of our coinage, or the disposition of the Government regarding it, that reasonable fault can be found. The disturbances from which our currency equilibrium suffers are the result of silver demonetization in other countries, and the consequent tax upon our gold resources. There is no question, we suppose, about foreign markets for American surplus products, so there can be no question about the kind of money required to maintain such trade. The Government might make potatoes legal tender, but when it comes to settling trade balances and liquidating the American holding of foreign investors, potatoes will not be "in it" at all. There should be found a common ground on which both bimetallists and silverites can stand and work together. There is a growing sentiment in favor of bimetallism in Europe, which might be greatly influenced and accelerated by a union of the true friends of silver here. We hope that the opportunity will not be lost by stiffnecked obstinacy and self-seeking. The real solution of the silver question is international bimetallism, and in the results of such a solution silver would find its rightful place and work in the currencies of the world.

Watermarks.

BY DANDY.

The strawboard men are at it again. All quotations have been withdrawn, and the orders which box makers are rushing in are all subject to price at time of shipment. The strawboard men held a meeting here last week, and a meeting this week at Detroit, Mich., at which the arrangements were perfected whereby the product of all of the mills, American and independent, was to be marketed through a corporation formed under the laws of New Jersey. This corporation is to take care of all of the boards produced, and it is expected that the price will go from $22@23 to $30, New York delivery. Just at present consumers are in a quandary and do not know what to do.

Talking about combinations reminds me of the news combination. This is progressing favorably, and while no new corporation has been formed it is said that D. O. Mills, the father-in-law of the editor of the *Tribune*, is to put the bonds on the market.

Some of the news men are kicking, and want to put in their mills at a price which seems exorbitant. The others object to this, and it remains to be seen whether these mills will go into the fold or not.

The Government Printer has stiffened his backbone, and, it is said, has annulled five contracts for machine-finished book paper, the contractors being located in New York, Boston and Philadelphia; and that at least one new contract for machine-finished paper has been placed with the New York and Pennsylvania Company at 3.40 cents.

If the Public Printer will only keep his backbone stiff and reject all paper which is not up to sample, enforcing deficiencies against bondsmen, he will confer a favor on the paper trade in general, and ought to be backed up in his work by all honest paper manufacturers who make a good grade of paper.

I noticed a card in last week's JOURNAL as to the wire makers East. I am moved to notice this by the fact that I judge that the Eastern wire manufacturers are seriously in love with each other and are really overburdened with a stock of harmony.

A young man, a college graduate, who has progressed far enough in paper making to wipe the grease off from the machines, or, as he says himself, is "chambermaid to three machines," drops into poetry occasionally and has recently relieved himself of a "Forty Years Ago" poem. If he keeps on one may expect a poem to go with every order for paper.

If this becomes the proper fad, one may expect every paper mill to have a poet on tap.

Every editor of a newspaper thinks he has a hard time of it, but the following, clipped from a Tennessee paper, downs them all: "We are mad! Darn the people! How can they expect us, out here 12 miles from a railroad, 25 miles from a river, millions of miles from heaven, about 2 miles from the devil, and about 200 yards from a whiskey shop, to get out a lively newspaper?"

A son of the Emerald Isle who with a fellow was working at a slitting machine in this city, which was run by an electric motor, said: "Be gorra, that is the way they make paper by electricity." That's so, that's the way they make a certain kind of paper.

Trade Talks.

W. F. Etherington, of Etherington & Hapgood, New York—I do not think that we are a barometer of the paper trade, and I tell all so when I am asked about business. I do not know of anybody who is so good a barometer of the condition of the paper business as the general paper dealer, who comes in contact with so many different kinds of business, and has out so many feelers all over the country, that he is in the best of positions to know or find out how things are going. He generally deals in all or several kinds of paper, while we occupy the unique position of handling one kind of paper—book—exclusively, and of going almost entirely to one branch of trade, the publishers. We do not, therefore, come in touch with that variety of people from whom we could gain accurate information upon which to base an opinion upon business matters. Speaking for ourselves alone, we can say that business has always been good, and we have never had a month of dull business. That seems to be saying a good deal, and if people in the trade heard me say it they would tell me that I was blowing; but it is so, nevertheless, and it is a great thing to be able to say it during such times as we have been and are now having. I presume that this has been due to the fact that we have a good line of papers, a desirable custom, which we try to keep, and that we have always succeeded in doing so. Business generally is bad in my opinion. I don't think that it has improved much. Prices certainly are low; in fact there are no prices. A mill man came in here the other day and wanted to sell me, and he was willing to sell not at his price, but at any price which I was willing to pay. This was not an order to be filled from stock, but was for an order to manufacture. That does not look well. I am not a manufacturer myself and do not know anything about manufacturing paper, but I am told that where a manufacturer has a mill it is better for him to run it on three-quarter time at a loss than let it stand idle. I understand that there has been some trouble on account of the Government paper contracts, and hear that one of the most prominent men in the trade in the city is involved. What is the matter? I don't just know what it is, but am told that he made a bid and secured a contract for book paper and that the officials have found some ground wood in it. If it is so, I am surprised, for I did not think that he would do such a thing; but if it is a fact, he should be made an example of. It is what the trade needs. It will do a great deal of good, and it would be much better to hold up such a man than some small fellow. I do not see why business cannot be conducted straight. I do not understand why men need to be dishonest or why they shouldn't do as they agree to do. If you submit a house a sample of paper the paper furnished should be like the sample, yet I know of numerous instances where there have been differences between the two. They usually go to some mill and buy a paper worth an eighth of a cent a pound less than the sample submitted, and put that in at the same value, when they know that it is not the same paper nor worth so much; but there is a nice class of men in the paper trade generally, and more perhaps in it than in any other branch of business, but like all other trades it has some shysters in its ranks of which it could be purified to its advantage. They generally give a private house what they agree to, but one great trouble is that the persons who sometimes buy the paper do not know anything about it. For instance, the buyer for a publisher wanted some book paper of the same quality and weight and in a larger sheet than he had had before, but it had to be hammered into that man's head that it was impossible to give him the same grade and weight of paper and have it weigh no more in a larger than in a smaller sheet. It does not require much sense to understand that in order to have a larger sheet of the same quality it must weigh more, and, if the larger sheet must weigh no more than the smaller, that it can only be accomplished by using a cheaper or lighter grade of paper. That is simple to almost anyone. The honest dealer does not do that. The private house gets what he contracts to deliver, and I know no reason why the same rule which applies to business firms should not apply equally as well to the Government. A great trouble here has been that officials have been lax and have failed to see that the paper furnished was like the sample. Bids could not be submitted with any hope of fair competition under such circumstances. This has opened a wide door for dishonesty, which has been going on for years, and many firms have become so disgusted with the whole proceeding that they now refuse to bid at all—and why should we? We can live without Government contracts. I am glad that a halt has been called. It is time. These practices should be stopped.

Paper for the Public Printing.

[By Telegraph to THE PAPER TRADE JOURNAL.]

BOSTON, June 14, 1895.—W. J. Thompson & Co. have no intimation of a loss of their Government contract. One lot of paper was rejected, the Government test claiming to show ground wood. Another lot has been made and shipped to be in Washington next week. DELESDERNIER.

[By Telegraph to THE PAPER TRADE JOURNAL.]

PHILADELPHIA, June 14, 1895.—Balfour and Simpson deny that their contracts for supplying paper for the public printing have been annulled. Cannot find Stoever. Another authority says that it is true.

FOUNTAIN PEN.

Changes, Removals and New Firms.

W. L. Yancey, publisher, Pittsburg, Kan., has sold out.

H. C. McPhail has opened a stationery store at Santa Maria, Cal.

Gingras & Caron, printers, Quebec, Que., have dissolved partnership.

R. E. Mussey, publisher, Claremont, N. H., has sold out to G. I. Putnam.

The *Herald* Publishing Company, San Bernardino, Cal., has been incorporated.

C. M. Whitman, publisher, Prophetstown, Ill., has been succeeded by A. B. Chase.

Duncan & McElvaney, printers, Pittsburg, Pa., have been succeeded by Duncan & Co.

Frank Kelble, stationer, &c., South Omaha, Neb., has been succeeded by W. E. Whalen.

E. Thaleg & Co., manufacturers of paper boxes, Philadelphia, Pa., have dissolved partnership.

Jas. F. Minturn, paper manufacturer, Hoboken, N. J., has been succeeded by the Franklin Paper Mills.

The Columbus *Star* Publishing Company, Columbus, Ga., has been incorporated by A. B. Lowe and associates. Capital stock, $10,000.

The Statute Law Book Company, Washington, D. C., has been organized by Theodore L. Cole and Jas. H. Thomas to do a publishing business.

The trustee of the estate of D. G. Lowry, bookseller and stationer, Keokuk, Ia., has sold the stock of books and stationery in his hands to C. H. Rollins & Co.

George J. Ganley, stationer, newsdealer, &c., Hudson, N. Y., has taken his brother, Thomas F. Ganley, into partnership, and the style of the firm is now Ganley Brothers.

The Lafayette Press, New York, has been incorporated to conduct a printing and publishing business. Capital stock, $30,000, and directors, John W. Lovell, Edward Lange and Charles E. Lange.

The John E. Beck Company, Baltimore, Md., has been incorporated to make and sell druggists' stationery and specialties by Erhard C. Knobloch, C. Ross Mace, Meredith Janvier, Alfred S. Miles and Oscar Wolff. Capital stock, $35,000.

The American Metal Edge Tag Company has been incorporated to manufacture metal edge tags in New York city. Capital, $20,000; directors, L. J. Kohnstamm, Adolph Liebes, of New York city, and E. A. Alexander, of Pocantico Hills, Westchester County.

The Information Publishing Company, of New York city, has been incorporated to print and publish magazines, periodicals and newspapers; capital, $30,000, and directors, J. M. Stoddart, E. G. Handy, H. C. Walsh, W. J. Jordan and F. A. Lloyd, of New York city.

The book store recently sold by Eastey & Caldwell, Sedalia, Mo., to J. W. DeWitt, of St. Louis, has been taken possession of by the attorney for the vendors, who allege that DeWitt purchased the store with bogus

deeds and securities which were of less value than represented.

The *News*, Franklin, Minn., is a new paper published by W. R. Hodges.

Jamestown, Pa., has a new paper called the *World*, edited by E. Wood.

The *Independent*, Arnheim, Cal., has been purchased by B. L. Bourland.

Vassar, Mich., has a new paper called the *Outpost*, published by L. L. Wilson.

The *Weekly Globe*, Monett, Mo., is a new paper, edited by Ed. A. Buckley.

The *Independent*, Manitou, Man., is a new paper.

The *News*, Rockport, Me., has suspended publication.

The *Blade*, Cadott, Mich., has been purchased by — Monroe.

The *Weekly Register*, Oroville, Cal., has started a daily edition.

Oroville, Cal., has a new paper called the *Daily Morning Times*.

The *Tribune*, Tecumseh, Neb., has suspended publication.

The *Labor Advocate*, Oshkosh, Wis., has suspended publication.

The *Sentinel*, Salem, Pa., has been purchased by M. G. McClung.

The *Sunday News*, Glens Falls, N. Y., has suspended publication.

The *Times*, Newcastle, Neb., has been purchased by E. J. Eames.

The *Evening Gossip*, Dubois, Pa., is the name of a new evening paper.

The *Democrat*, Winchester, Ind., has been sold to G. D. Williamson.

Clarence H. Totman has bought a half interest in the wall paper, &c., business of E. M. Comstock, Conneaut, Ohio.

The Jowitt Carbonized Felt Company, of New York city, has been incorporated to manufacture and sell sheathing paper, roofings, &c. Capital, $50,000, and directors, William G. Winans and M. H. Winans, of New York city; H. H. Jowitt, of Chatham, N. J.; J. A. Smith of Newark, N. J., and Wm. E. Mountfort, of Brooklyn.

Charles M. Moses, Joseph Landry, Lucius H. Kendall, Julien S. Bomdon, Radcliffe H. Ford, Charles E. Pillsbury, Ludger J. Renouf, John B. Pare, Jr., Charles E. Atwood, Charles B. Harmon and Kenneth W. Sutherland, Biddeford and Saco, Me., have been organized as the L'Observateur Publishing Company. The capital stock is $9,000. Mr. Renouf is president and Mr. Pare is treasurer.

A certificate of increase of capital stock of the Solvay Process Company, Geddes, N. Y., from $3,000,000 to $4,000,000, has been filed. The certificate states that the whole amount of the debts and liabilities of the corporation is $1,187,940.

The Adams Power Company, Adams, Mass., has been incorporated to manufacture paper and paper making machinery. Capital stock, $250,000, and directors, Charles A. Howland, H. H. Wellington and James C. Chalmers.

The Linton Coated Paper Company, Richmond, Va., has been incorporated to coat and manufacture paper. Officers: E. D. Christian, president; A. H. Christian, Jr., vice-president and treasurer; Joseph Linton, superintendent.

Manassas, Va., has a new paper called the *Journal*, edited by H. W. Moran.

Fishkill, N. Y., has a new paper called the *Daily Herald*, published by Adam & Still.

The *Marion County Republican*, Salem, Mo., has been purchased by J. H. Utterback.

The *Weekly Post*, Beatrice, Neb., has been purchased by Christian Kiefer and Henry H. Faust.

The *Enterprise*, Herman, Minn., has been purchased by Nellie Jacobs, who will edit and publish it.

C. J. Walden has purchased a half interest in the *Southwest Mail*, Nevada, Mo., and assisted by Harvey Isbell will manage that paper.

Chas. S. Reeves has sold his interest in the *Hearth and Hall*, Grand Rapids, Mich., to A. E. Winchester, who has assumed the editorial management.

Holt Brothers, New York, have been incorporated to do a general printing, lithographing and printing business in New York city; capital, $10,000, and directors, Chauncey Holt, of Jersey City; H. M. Nesmith, of Astoria, and W. H. Coade, of New York city.

In Town.

C. E. Callender, Glendale, Mass.; B. F. Reist, Tyrone, Pa.; F. W. Spicer, Dexter, N. Y.; G. W. Russell, Lawrence, Mass.; W. A. Russell and A. N. Burbank, Boston, Mass.; James Symington, Lancaster, Pa.; H. E. Pratt, Springfield, Mass.; T. S. Safford, Camden, N. J.; Frank Farrell, Philadelphia, Pa.

Failures.

F. G. Holbrook, publisher, Merrimac, Mass., has made an assignment.

Elder & Norton, dealers in wall paper, &c., Philadelphia, Pa., have made an assignment.

Florence E. Doyen, bookseller, newsdealer, &c., Quincy, Ill., has made an assignment to Lyman McCarl. Liabilities are about $1,000 and the assets are $1,750, out of which Mrs. Doyen is entitled to retain $400 worth.

John Single, proprietor of the Delphos Paper Mills, of Syracuse, N. Y., and Delphos, Ohio, has made an assignment to Horace A. Reeves. Liabilities estimated at $27,000. Judgments for $6,100 have recently been entered against him.

The Mound City Roll Paper Company, St. Louis, Mo., has made an assignment to Charles A. Davis. The instrument filed includes a stock of paper and merchandise valued at $10,000; store and office fixtures, $1,000, and open accounts, $3,000.

The Mound City Roll Paper Company, St. Louis, Mo., has made an assignment. It was incorporated in 1889, had a capital of $18,700, and the inventory of March 1 showed assets, $34,713; liabilities, $13.565; at which time Geo. C. Burr, who had been president for two years, resigned.

Rufus B. Cowing, Jr., has been appointed receiver in supplementary proceedings for Chas. W. Lovell, bookbinder, of Nos. 409 to 415 Pearl street, on the application of Evan Jones, a creditor. Mr. Lovell has been in the printing and bookbinding business for several years, formerly did a large business and a year ago valued his plant at $52,000, but since then his affairs have not prospered and two months ago he was succeeded by other parties.

On Thursday John B. Haygooni and Hovhannes S. Tavshanjian were appointed receivers for the business carried on under the name of the Columbian Bookbinding Company, of Nos. 40 to 44 Bond street, New York, in a suit brought by Mr. Haygooni against his partners, Hartin Kasab and Hachig Ayvad, to dissolve the firm. The bond was fixed at $12,000. The business wes started by Mr. Ayvad in 1891, and Messrs. Kasab and Haygooni became partners two years ago. The latter two were regarded as the capitalists of the firm and claimed to have contributed $20,000 to the business. A month ago two chattel mortgages were filed on the plant, in favor of H. V. Constant, for $5,000, and S. V. Constant, for $4,475. A judgment for $1,680 was obtained against the concern yesterday by A. Alca.

Fires.

The mill of the Wabash Paper Company, Wabash, Ind., was damaged by fire on May 30. Loss, $1,000.

The F. O. Sawyer Paper Company, St. Louis, Mo., was damaged by fire on June 9. Loss not serious; insurance, $65,300.

Sackett & Wilhelm, lithographers, 110 Fifth avenue, New York, were damaged $3,000 by fire June 13. Loss covered by insurance.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, June 14, 1895.

THE MONEY MARKET. — The stock market was quiet, and the majority of the moving shares closed at slightly lower figures. The call loan market is easy at 1@1½ per cent. on stock collateral. In time loans the supply continues excessive. Quotations are 1½@2 per cent. for thirty to sixty days, 2 per cent. for ninety days to four months and 2½@3 per cent. for five to seven months on good marketable collateral. The supply of commercial paper is fair. Quotations are 2½@2¾ per cent. for sixty to ninety day bills receivable, 2¾@3¼ per cent. for four months' commission house and prime four months' single names, 3@3½ per cent. for prime six months' and 4@5 per cent. for good four to six months' single names. Business in choice paper is done to a large extent directly between makers and the banks. The market for both sterling and Continental bills shows little change. Its undertone is firm, but there seem to be just sufficient Loan Syndicate bills offered to keep the market in control. Posted rates were $4.89 for sixty days and $4.90 for sight. Actual rates were $4.88¼@4.88¾ for sixty days and $4.89¼@4.89¾ for sight.

THE PAPER TRADE.—There is a steady call for News and prices are held very regular. The manufacturers in this grade have been holding meetings, considering the formation of a corporation to control the sale of this grade of product, and reports are to the effect that matters are progressing very fairly. Strawboard makers have withdrawn all quotations, and all orders placed now are subject to market price at time of shipment. Other than this the market is quiet and none of the grades show any special features.

JUTE BUTTS.—Resellers are holding paper quality Butts at 1¼c. and Calcutta shipments are offered at 1.20c., with no takers.

WOOD PULP.—There is a steady call for Ground Wood, and prices rule as before.

WOOD FIBRE.—Chemical Fibre is in fair call. Domestic Bleached Soda is quoted at 2½@2¾c., as to quality. Domestic Sulphite is quoted at 1⅞@2⅜c., as to quality, for Unbleached, and 3½c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.60@2.75c.; Bleached, same process, 3½@3.90c.; Unbleached, sulphite process, ——@3.15c.; Bleached, do., 3½@4c.; Bleached Straw Pulp, 3.80c. This week there were imported at this port 35 tons of Chemical Fibre, being 25 tons from Antwerp and 30 tons from Hamburg.

FOREIGN RAGS AND PAPER STOCK.—There are some little lots moving all the time, but there is no business of importance, neither consumers nor sellers being willing to make contracts for far ahead. We note sale 250 bs. Japan Blues at p. t. This leaves only two lots of these goods on spot, both in store, for which 1¾c. is asked, with sample lots sold at 1.35c. Imports for the week aggregated 3,002 bales and 55 tons, being 1,058 bs. rags, 139 bs. papers, 55 tons chemical fibre and 1,805 bs. manillas. Ports of shipment and quantities are as follows: Antwerp, 25 tons chemical fibre, 133 bs. manillas; Bremen, 521 bs. rags, 347 bs. manillas; Bristol, 560 bs. manillas; Hamburg, 326 bs. rags, 30 tons chemical fibre; Havre, 101 bs. manillas; Hull, 144 bs. rags; London, 67 bs. rags, 139 bs. papers, 122 bs. manillas; Newcastle, 287 bs. manillas; Rotterdam, 255 bs. manillas.

DOMESTIC RAGS.—The call for Domestic Rags is quiet. Prices rule 3c. for Whites; 2¼c. for Soiled Whites, and 1¼c. for Thirds and Blues.

BAGGING, &c.—The call for Gunny is quiet and the quotation ranges from 1@1.02½c., and no sales reported. Mixed Bagging ranges 85@90c.; Wool Tares at 1.15c., and Burlap Bagging, 1@1.15c. We note sale 500 bales Calcutta Jute Threads on spot at 1.32½c.; Manilla Rope remains high, and foreign is quoted at 1.95@2c., the latter for "Wooden Tag." Imports for the week aggregated 1,805 bales, 133 bs. from Antwerp, 347 bs. from Bremen, 560 bs. from Bristol, 101 bs. from Havre, 122 bs. from London, 287 bs. from Newcastle, and 255 bs. from Rotterdam.

OLD PAPERS.—The call for old papers is light. We quote: No. 1 Hard White Shavings, 2½c.; No. 1 Soft White do., strictly free from wood, 2.05c.; Soft White do., ordinary, 1⅞@2c.; Old Ledgers, 1⅞c.; Solid Printed Books, 1¼c.; Mixed Shavings, No. 1, 1@1½c.; Mixed Shavings, No. 2, ¾c.; Extra No. 1 Manillas, 90c.; No. 1 Manillas, ordinary, 75c.; No. 2 Manillas, 60c.; Light Book Stock, 60c.; Folded News (overissues), 50@55c.; Mixed Papers, 35c.; Commons, 25@30c.; Straw Clippings, 45c.; Binders' do., 45c.

STRAW.—There is a steady call for Straw and prices are regular. We quote: Long Rye at 65c.; Short Rye at 45@50c.; Wheat at 40@50c.; Oat at 40@50c.

ROSINS.—Medium and pale grades are steady. We quote: Common to Good Strained, $1.77½@1.80; E, $1.95@2; F, $2; G, $2.10; H, $2.25; I, $2.50; K, $2.70; M, $3; N, $3.15; W G, $3.30.

CHEMICALS.—The market for paper makers' chemicals is quiet. Under late date J. P. Brunner & Co. speak of the Liverpool market as follows: "There is a steady market for heavy chemicals, and a fair amount of business going on, while in some cases prices seem inclined to harden a little. Soda Ash is not active, but at the same time there is a fair consumptive demand at steady prices. For tierces we quote spot range: Leblanc Ash, 48 per cent., £3 10s. to £3 15s. per ton; 58 per cent., £3 15s. to £4 per ton; Ammonia Ash, 48 per cent., £3 to £3 5s. per ton; 58 per cent., £3 5s. to £3 10s. per ton, net cash; bags, 5s. per ton less. Soda Crystals in moderate request at £2 2s. 6d. to £2 5s. per ton; less 5 per cent. for barrels. Caustic Soda in demand and quotations are firm, with an upward tendency. We quote spot range: Sixty per cent, £6 7s. 6d. to £6 10s. per ton; 70 per cent., £7 7s. 6d. to £7 10s. per ton; 74 per cent., £8 7s. 6d. to £8 10s. per ton; 76 per cent., £9 5s. to £9 10s. per ton, net cash. Bleaching powder is rather firmer, and for hardwood packages quotations range from £7 to £7 10s. per ton, net cash, as to destination." Bleaching Powder on spot remains about as it has been. The demand is not brisk, but prices hold their own. Sal Soda is in fair call, but prices are not over strong. Alkali is not firm and prices range all the way from .90@1.05c. Caustic Soda is in better demand on spot, the general quotation being 2.10c. During the week there have been sales of Bleach at 1.80@1.85c.; 10 tons Soda Ash at 1⅛c.; Caustic Soda 2.10c., and Alkali, .90@1.05c.

CHINA CLAY.—An arrival which was unexpected will relieve the market for the present. Sales are reported of 100 casks of extra grades from dock at $16@16.50 per ton. For ordinary grades there is only a moderate demand at $11@13 per ton for arrival.

TWINES.—There is a very fair call for stock. We quote: Sisal Hay Rope, 5@6c.; Sisal Lath Yarn, fine, 9¼c., and medium, 9c.; Jute Lines, 7½c.; Jute Ready, 7@7½c.; New Zealand Hay Rope, 6¼@7¼c.; New Zealand Lath Yarn, fine, 9¼c.; medium, 8¼c. Twines—Hemp, 4½ and 6 B Russia, 12c.; 4½ and 6 A American, 12c.; 4½ and 6 D Jute, 9½c.; 4½ and 6 L Jute, 9c.; Hemp Ball, 18 B C, 17c.; 18 C, 15c.; Russian Hemp Hay Rope, 9c.

COAL.—The market is unchanged, and prices rule as they have, with only a moderate call for goods.

EDWIN BUTTERWORTH & CO., MANCHESTER ENGLAND,
PACKERS OF ALL KINDS OF
Paper Stock, Cotton Waste and Buffalo Sizing, Wood Pulp, Moist and Air Dry Pulp, Soda and Ground Pulp,
83 GUNNY BAGGING, &c.
OFFICE IN NEW YORK:
Vanderbilt Building, No. 132 Nassau Street,
JAMES FIRNIE, A. S. DEMAREST, } Managers.

WATERBURY
Felts and Jackets,
MANUFACTURED BY
H. WATERBURY & SONS CO.,
ORISKANY, N. Y.
Adapted to *every* grade of paper, from the *finest* to the *coarsest*.
The Largest Manufacturers of Paper Makers' Felts in the World.
Our wet machine or pulp felts are *unequaled* for *durability*.
For WRITING and LEDGER PAPERS We warrant a felt equal to anything imported.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.16	@	$0.21
Flat Caps, superfines	11½	@	14
Flat Caps, fines	11	@	13
Flat Caps, engine sized	7	@	9
Blotting, American	8	@	12
Blotting, English	17	@	....
Book, super sized and calendered	5	@	8
Book, super sized and tinted	5	@	8
Book, extra machine finish	5	@	....
Book, machine finish, low grade	4½	@	5
News	2¾	@	3
Poster	3	@	....
Hanging, superfine, No. 1	8	@	10
Hanging, superfine, No. 2	6	@	8
Hanging, machine satin	4	@	4½
Hanging, white blank, No. 1	4	@	4½
Hanging, curtain	3½	@	4
Hanging, brown	2½	@	3
Colored papers, double mediums	6½	@	8
Colored papers, glazed medium	7½	@	8½
Colored papers, tobacco	8½	@	9¼
Colored papers, tissues, 20×30, ℔ ream	1.10	@	1.35
Tissues, black, 20×30, ℔ ream	1.40	@	1.50
White tissue, 20×30, ℔ ream	60	@	80
Manillas, Flour sack, cream	10½	@	....
Manillas, Flour sack, drab	9½	@	11
Manillas, Rope, unbleached No. 1	9½	@	11
Manillas, Rope, unbleached No. 2	7½	@	9
Manillas, No. 1, light weight	6½	@	6¾
Manillas, No. 1, heavy weight	6¾	@	6½
Manillas, No. 2	5	@	6
Manillas, Bogus	2½	@	3½
Wrapping Parchment	16	@	....
Tissue Manillas, full count, weight and size, 24×36, other sizes in proportion	55	@	60
Hardware, light colored, No. 1	4½	@	....
Hardware, No. 1, glazed, tarred	4½	@	....
Hardware, No. 1, glazed	4	@	....
Binders' Boards, ℔ ton, No. 1	70.00	@	90.00
Binders' Boards, ℔ ton, No. 2	30.00	@	40.00
Strawboards, air dried, No. 1, ℔ ton	47.50	@	....
Strawboards, steam dried, No. 1, ℔ ton f. o. b. mill	....	@	24.00
Straw Wrapping, basis, 15×20, 15½ lbs., 20 sheets—			
36×40, from 38 to 42 lbs. ℔ rm	65	@	....
30×40, from 30 to 34 lbs. ℔ rm	....	@	52
24×36, from 24 to 26 lbs. ℔ rm	....	@	48
22×32, from 24 to 26 lbs. ℔ rm	45	@	....
20×30, 21 lbs., ℔ rm	....	@	34
20×30, from 14 to 17 lbs. ℔ rm	26	@	....
16×22, from 12 to 13 lbs. ℔ rm	23	@	....
18×28	....	@	24
15×20, 10 lbs. ℔ rm	....	@	17
15×20, from 7 to 8½ lbs. ℔ rm	....	@	13
14×18	....	@	12
12×16	....	@	11
11×15	....	@	10
Straw Wrapping, ℔ lb., heavy weight	1.75	@	1.85
Straw Wrapping, ℔ lb., light weight	1¾	@	....
Cigarette, Straw Tissue, per case of 100 boxes, 50 books to the box, 900 sheets to the book	21.00	@	30.00
Tea Papers, 16 sheet quires—			
12×18	....	@	14
14×20	....	@	18
Card Middles, ground wood	5½	@	6¼
Card Middles, long fibre wood	8½	@	9
Card Middles, rag and wood	6	@	9
Pulp Lined Boards, single manilla, No. 100 and heavier	42.50	@	....
Pulp Lined Boards, double manilla, No. 100 and heavier	47.50	@	....

Shavings and Old Paper.

White Collar Cuttings	3	@	....
White Envelope Cuttings	3½	@	....
Hard White Shavings, No. 1	2½	@	3
Soft White Shavings, strictly free from wood	2.15	@	....
Soft White Shavings, ordinary	1⅞	@	2
Mixed Shavings, part white	1	@	1½
Ledger and Writing	2	@	2.10
Solid Stock	....	@	1¼
Book Stock, No. 1 light	....	@	1½
Old Newspapers	40	@	....
Manillas No. 1	....	@	1.15
Manillas No. 2	80	@	....
Mixed Manillas	60	@	....
Hardwares, No. 1	65	@	....
Mixed Papers	40	@	....
Commons	25	@	30
Binders' Board Cuttings	50	@	....
Strawboard Cuttings	45	@	50

Rags, Rope and Bagging.

White Shirt Cuttings, No. 1	4¼	@	....
Mill Assorted Whites	3½	@	3¾
Unbleached Muslins	4⅜	@	4¾
City Whites, No. 1	3	@	3¼
New Seconds, light	2¼	@	....
New Seconds, dark	1¾	@	2
No. 2 Whites	¾	@	1.15
Cotton Canvas, No. 1	3	@	....
Linen Canvas, No. 1	....	@	2¼
Country Mixed, free of Woolens	60	@	....
Seconds (City)	....	@	....
Colors, ℔ 100 lbs.	....	@	....
Manilla Rope	....	@	9½
Manilla Rope, tarred	....	@	....
Gunny Bagging, No. 1	1.10	@	1.20
Mixed Bagging, No. 1	⅞	@	1
Burlap Bagging, No. 1	1.10	@	1.15
Kentucky Hemp Bagging	....	@	....
Tar Shakings	1	@	....
Hemp Twine Stock	....	@	....
Jute Waste	¼	@	1¼

English Rags, &c.

New Cuttings, cotton	5	@	5½
London Fines, cotton	3½	@	4
Outshots, cotton	2½	@	3
Seconds	1½	@	1.65
Thirds	1¼	@	1⅜
New Print Tabs	2¾	@	3
Checks and Blues	2¼	@	2¾
Light Prints	1½	@	1¾
Light Fustians	2	@	2¾
Dark Fustians	1¾	@	1⅞
Black Calicoes	1¾	@	1¾
First Canvas Linen	3¾	@	4
Second Canvas Linen	3	@	....
Gunny Bagging, No. 1	1⅞	@	1¾
Gunny Bagging, No. 2	1.05	@	1.20
Burlaps Bagging, No. 1	....	@	1.60
Rope, Manilla	2½	@	....
Rope, Manilla, tarred	....	@	2
Jute Threads	....	@	1¾
Clean Jute Ropes	2	@	2¼
Mixed Rope	1½	@	1¾
Flax Tow	1½	@	1¾

English Old Papers and Shavings.

Hard Shavings, No. 1	2	@	....
Soft Shavings, No. 1	2¼	@	2¾
White and Colored Shavings, No. 1	1¾	@	1¾
White and Colored Shavings, No. 2	1	@	1¼
Cream Post Shavings	2½	@	....
Paper Collar Cuttings	....	@	2
Briefs and Letters	1¾	@	1¾
Books and Pamphlets	1.10	@	....
Old Newspapers	....	@	....
Broken News and Letters	⅞	@	1
Old Blank Books	2¼	@	2½
White and Buff Railway Sheets	1¼	@	....

Hamburg Rags, &c.

N S C, New Shirt Cuttings	....	@	4½
S P F F F, No. 1 Linens	....	@	3½
S P F F, No. 2 Linens	....	@	3½
S P F, No. 3 Linens	2	@	2¼
F G, No. 4 Linens	....	@	2
F F, No. 5 Linens	⅝	@	1.85
Extra Fine Blue Linen, light color	2	@	....
L F B, Blue Linens	2¼	@	....
C S P F F F, No. 1 Cottons	....	@	3½
C S P F F, No. 2 Cottons	....	@	2¾
C S P F, No. 3 Cottons	1⅞	@	....
C C C, Colored Cottons	....	@	75
C F X, Low grade Cottons	....	@	75
Extra Fine Blue Cottons	....	@	1½

Chemicals, Coloring Materials, &c.

Alkali, 58 ℔ cent	1	@	1.30
Alum, lump	1.65	@	....
Alum, ground	1.75	@	....
Alum, Keystone	1¾	@	⅝
Alum, Diamond	....	@	3½
Alum, pearl	2¾	@	2¾
Alum, porous	2¾	@	2¾
Alum, Merrimac porous	2	@	....
Aluminous Cake	....	@	1¾
Anti-Chlorine	....	@	2¾
Bichromate Potash, American	....	@	10
Bleaching Powders, spot	1.85	@	1.95
Cambridge Ochre	11.25	@	....
Caustic Soda, 60 ℔ cent	2.20	@	2.30
Clay, China, English, ℔ ton	12.50	@	17.00
Clay, China, "Star"	13.50	@	....
Clay, China, "Keystone"	10.75	@	....
Clay, South Carolina, ℔ ton	9.50	@	10.00
Clay, Terra Alba, French, ℔ cwt	1.00	@	1.12½
Clay, Terra Alba, American, No. 1	95	@	1.00
Corn Starch	3	@	3½
Copperas, American	....	@	80
Extract Logwood	9½	@	....
Mineral Pulp	10.25	@	....
Orange Mineral	....	@	9½
Potato Starch	3½	@	4½
Prussian Blue, dry	20	@	25
Prussiate Potash, American	....	@	24½
Rosins, common to good strained, ℔ bbl	1.77½	@	1.80
Rosins, E, ℔ bbl	1.95	@	2.00
Rosins, F, ℔ bbl	2.00	@	....
Rosins, G, ℔ bbl	2.10	@	....
Rosins, H, ℔ bbl	2.25	@	....
Rosins, I, ℔ bbl	2.50	@	....
Rosins, K, ℔ bbl	....	@	2.70
Rosins, M, ℔ bbl	....	@	3.00
Rosins, N, ℔ bbl	....	@	3.15
Rosins, W G, ℔ bbl	3.25	@	3.30
Sal Soda	1.10	@	....
Soda Ash Caustic, 48 ℔ cent	1.60	@	1.65
Soda Ash, carbonated, 48 ℔ cent	1.67½	@	1.70
Soluble Blue	40	@	55
Spanish Brown	½	@	1
Sugar Lead, white	12	@	....
Sugar Lead, brown	7	@	....
Sulphate of Alumina	....	@	2¼
Sulphuric Acid, 66 ℔ cent	1	@	1¼
Ultramarine, blue	14	@	17½
Venetian Red	1	@	1½
Vitriol, blue	5¼	@	5¾
Yellow Ochre Rochelle	1.35	@	1.50

BOSTON MARKET.

Paper Stock.

White Rags, No. 1	3½	@	3¾
No. 2 Whites	2¾	@	....
Common Seconds	1¾	@	2
Thirds and Blues	1¾	@	....
Southern Mixed Rags	80	@	90
Colors, country	½	@	¾
Colors, city	25	@	30
New Calicoes, light	2	@	....
New Calicoes, dark	1¾	@	....
Shirt Cuttings, best	4	@	....
Shirt Cuttings, good	3½	@	....
Shirt Cuttings, unbleached	3½	@	....
Shirt Cuttings, unbleached No. 2	3	@	....
Shirt Cuttings, cheviots	2¾	@	2½
Overall Cuttings, blue	2¼	@	2¾
Overall Cuttings, brown	1¾	@	2
Shoe Rags, bleached	3½	@	3¾
Shoe Rags, unbleached	3¼	@	3½
Shoe Rags, brown	2¾	@	2¾
Cotton Flannels, bleached	3	@	....
Cotton Flannels, unbleached	3½	@	3½
Corset Rags, drab	3½	@	3½
Corset Rags, white	4	@	4¼
Tailors' Seconds	1¾	@	1¾
Tailors' Colors	25	@	30
Cotton Canvas	2¼	@	2½
Cotton Canvas, No. 2	1¾	@	1¾
Linen Canvas	1¾	@	1¾
New Canvas Cutting	3½	@	3½
Insole Canvas	3	@	3¼
Print Papers, best	30	@	35
Folded News	40	@	45
Old Waste Papers	25	@	30
Manilla Paper, No. 1	1.10	@	1.15
Manilla Paper, good mixed	80	@	95
Manilla Paper, blues	65	@	70
Mixed Book Stock	95	@	1.00
Books and Pamphlets	1.10	@	1.15
Book Stock, light	70	@	75
Ledgers and Letters	1.85	@	1.90
Soft Book Shavings	1½	@	2
Hard White Book Shavings	2½	@	2¼
Leather Board Chips	75	@	80
Straw Chips	35	@	40
Shivey Bagging	1½	@	1½
No. 1 Factory Bagging	1.00	@	1.10
Burlap Bagging	1.00	@	1.10
Burlap Bagging, large pieces	1¾	@	2
Kentucky Bagging	1	@	1½
Mixed Bagging	½	@	¾
No. 2 Bagging	½	@	¾
Shakings, soft	½	@	¾
Tarred Shakings	1	@	1¼
Standing Rigging	2½	@	2¾
Standing Rigging, foreign	2½	@	2¾
Bolt Rope	9	@	2.05
Oakum Junk, No. 2	1½	@	1½
Tarred Paper Junk	1.15	@	1.20
Tarred Paper Junk, inferior	¾	@	¾
Manilla Rope	1¾	@	1¾
Tarred Manilla	1¾	@	1¾
Hemp Strings	1	@	1¼
Sisal Strings	1.15	@	1.20
Wool Strings	1.10	@	1.15
Flax Tow	¾	@	¾
Flax Waste	¾	@	¾

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WANTED — BEATING ENGINEER; ONE who can successfully prepare sulphite and wood for manilla and hardware. Address, stating wages and references, at once X. X. X., care Paper Trade Journal.

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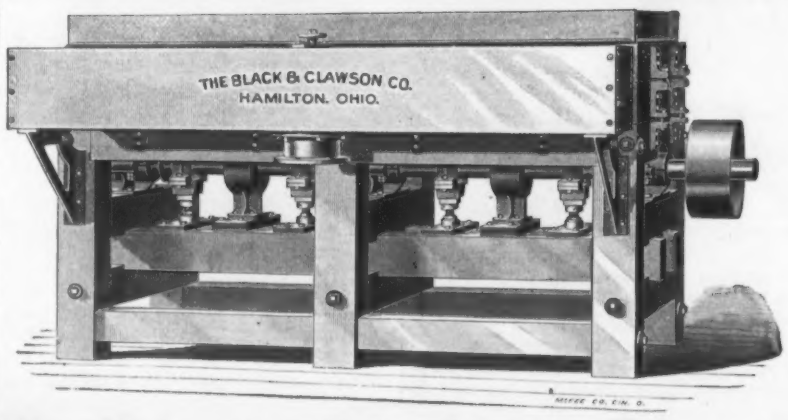

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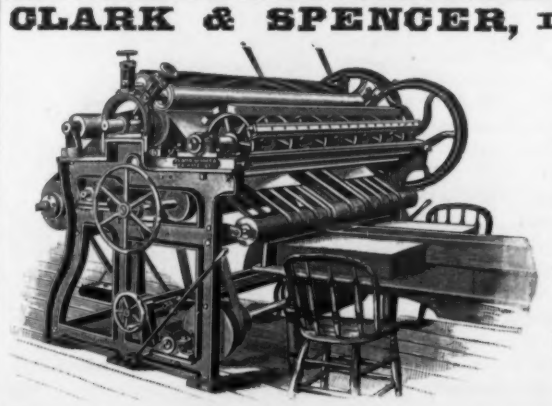

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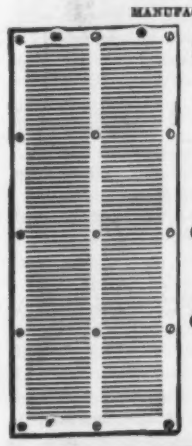

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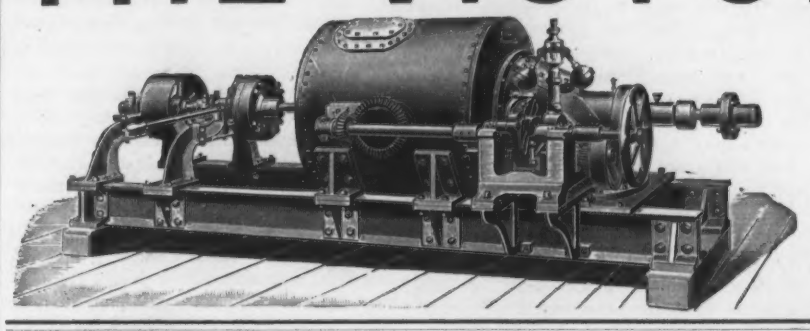

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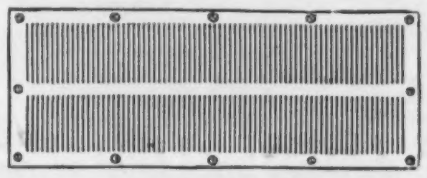

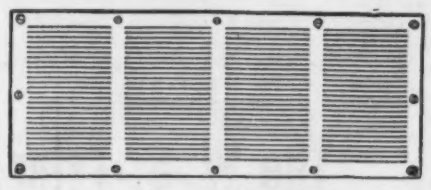

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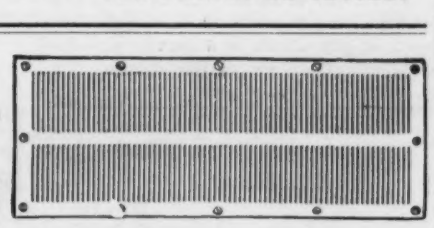

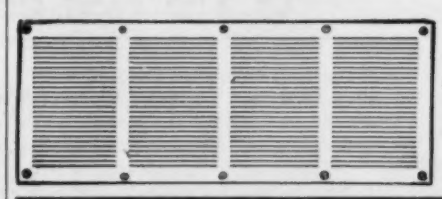

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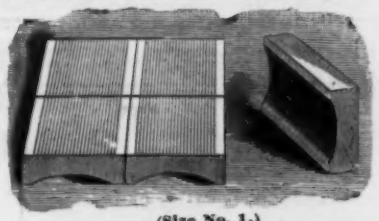

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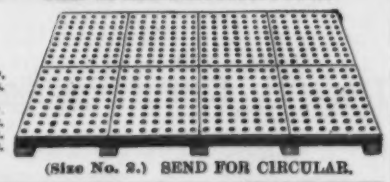

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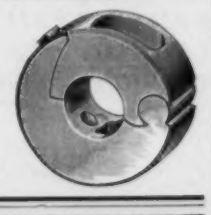

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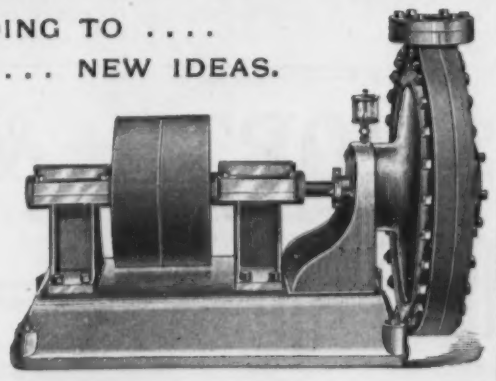

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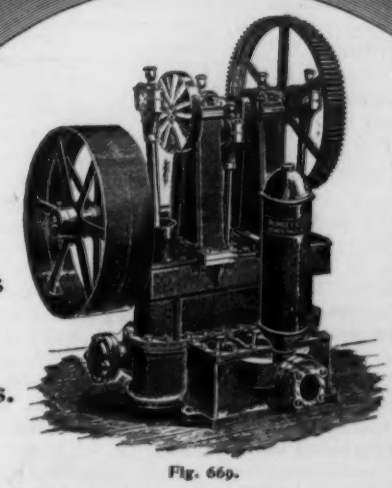

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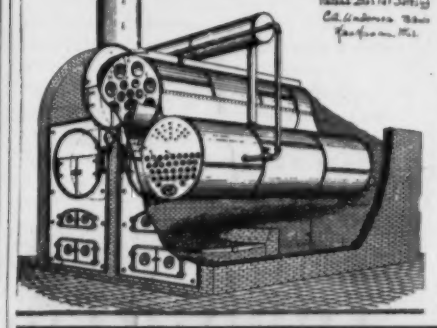
ANDERSON'S PATENT BOILER SETTING.



Practical Test.

NEENAH, Wis.

C. A. ANDERSON, Esq., Kaukauna, Wis.:

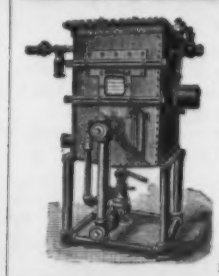
DEAR SIR—We have been using your Patent Feed Water Boiler eleven months and it has given us perfect satisfaction. We are perfectly satisfied that it saves us from 15 to 20 per cent. fuel; it purifies the feed water and keeps the lower boilers free from scale, and is so simply and durably constructed that it causes no extra trouble to run it. We can heartily recommend your Boiler to anyone wishing to improve their steam plant.

(Dictated.) WINNEBAGO PAPER MILLS, W. L. DAVIS, Secy. and Treas.

Address all communications to

C. A. ANDERSON,

KAUKAUNA, WIS., U. S. A.



The Economizing of Fuel and Water in any Steam Plant means simply added earning power, and this we guarantee with our Vacuum Feed Water Heater and Purifier. We also invite attention to the Webster Separator and Williames Vacuum System of Steam Heating. . . . . .

Catalogues of the above Mailed upon Application.

Warren Webster & Co.,

Camden, N. J.

NO. 4. NEW YORK—39 Cortlandt Street CHICAGO—Monadnock Building.

JENKINS' PACKING

Is all right, so say thousands of Engineers. We have positively refused many times to cheapen the quality to compete with other makers. It is better to-day than when first put on the market twenty years ago. It is cheaper than many other kinds because it does not weigh as much per yard. It is honestly made, and will do all that any other Packing will do, and has advantages that no other has.

JENKINS BROS.,

New York. Chicago. Philadelphia. Boston.

Manufacturing News.

EASTERN STATES.

Work at the new pulp mill, Orono, Me., is rapidly progressing, and will probably be completed in about a week. The brick work is being pushed right along and the walls are fast rising. The largest pieces of machinery are being put in. The penstocks are at work, but on account of the rain they have been unable to work steadily.

Work on the addition to the mill of the George R. Dickinson Paper Company, Holyoke, Mass., is being pushed rapidly and the builders hope to have the structure ready to receive the machinery early in August.

MIDDLE STATES.

The Ondawa Paper Company, Middle Falls, N. Y., started up its mill on June 3.

John Minton has sold his paper mill at Medusa, N. Y., to L. J. Smith, of Surprise, N. Y., and it is reported that it will be converted into a barrel factory.

On June 4 a new smokestack, 73 feet high, was put in place on the mill of the Fayetteville Paper Company, Fayetteville, N. Y. It was made at the Beard foundry, Syracuse, N. Y. Kelley & Hurlburt are improving the opportunity to make repairs while the paper making machinery is not in use.

The J. & J. Rogers Company, Ausable Forks, N. Y., is making extensive improvements to its pulp mill, including new digesters, boilers and a steam engine to help when water gets low. It is expected that these changes will add about 50 per cent. to the output of the mill.

There is talk of putting up a new pulp mill about 9 miles up the river from Malone, N. Y., where 100 feet fall of water can be obtained.

The Fullerville Iron Works, Fullerville, N. Y., have nearly completed their talc grinding improvements in the pulp mill and expect soon to be turning out talc and pulp from the same power.

The Goulds Manufacturing Company, Seneca Falls, N. Y., reports recent sales of its triplex power pumps as follows: Freydenburg Falls Paper Company, Plattsburgh, N. Y., one 12x12 inch pressure pump, to be used with the grinders; Jay Paper Company, Jay, Me., one 7x8 inch stuff pump, to be used for pumping stuff; the Lewiston Foundry and Machine Company, Lewiston, Pa., two 1¼x2 inch triplex power pumps for boiler feeding; the Tide Water Oil Company, Bayonne, N. J., three 4x6 inch triplex power pumps, two to be used for pumping oil and one for pumping water; one 1¾x6 inch, and one 2½x6 inch, which are to be used for pumping ammonia; the Standard Oil Company, Olean, N. Y., two 8x12 inch triplex power pumps for water supply; P. H. Potter, Springfield, Mass., one 4x6 inch triplex power pump for boiler feeding; Worcester Engineering Company, Worcester, Mass., one 12x12 inch triplex power pump for the water works system at Millbury, Mass.

The Standard Wall Paper Company, Glens Falls, N. Y., started its factory successfully on June 8. From fifty to one hundred men are employed.

Work on the buildings for the Piercefield Paper and Mining Company, Piercefield Falls, N. Y., is being pushed with vigor. Some time ago the gateway in the race was washed out, it being too light. This caused a delay, but a new one is being built strong enough to stand any head of water. The digester building is up and ready for the roof, and the roof is being put on the machine room. The beater room and sulphite plant will be hurried along as soon as blasting is finished for the wheel pit. A large two story company store is in full operation and is well stocked. A boarding house, suitable for the entertainment of guests, is under way, and Mr. Warren, the superintendent, will break ground next week for his house on Cahoon avenue, which runs along the bluff above the mill. The company expects to have paper over the machines this fall.

WESTERN STATES.

The Black & Clawson Company, Hamilton, Ohio, has contracted to equip the paper mill which is to be erected by Mullen Brothers at St. Joseph, Mich.

The mill of the American Straw Board Company, Lockport, Ill., has been shut down because of a strike of the employees for higher wages.

The straw haulers employed by the American Straw Board Company, Anderson, Ind., threaten to quit work unless their old scale of prices is continued. The men who had been receiving from the company $2.50 for 2,500 pounds of straw have been notified that they will be paid $2.50 for hauling 3,200 pounds.

In the case of the Haldeman Paper Company, Hamilton, Ohio, against the American Straw Board Company, a verdict in favor of the plaintiff in the sums of $13,500 for damages and $7,156.25 for purchase money was returned, while on the defendant's cross claim it was awarded the sum of $4,450 for rental. The case was one for damages in the sum of $41,250. The defendant is the owner of the Rockdale Paper Mills, which are situated just north of Hamton, in Butler County. It leased the property in 1891 to George N. Friend, giving him a privilege of purchase for $25,000, to be paid for one-fourth down and in yearly instalments thereafter. Friend transferred the lease to the Haldeman Paper Company, which afterward made the first payment of $6,250. It afterward asked for a deed for the property, which the defendants consented to give, but when the deed was offered it was found to contain stipulations not authorized by the contract, limiting the working of the mills and prohibiting the manufacture of a certain kind of paper under a penalty of $20,000, or a forfeiture of the premises. This deed the Haldeman Company refused to accept and instituted proceedings for damages as above. The jury awarded it damages, but held at the same time that there was a certain sum due the defendant for rental of the property.

CANADA.

It is reported that a pulp mill is to be built near Montreal, Que., and that work will begin on it immediately. Thomas Allison is believed to be one of the parties interested.

Obituary.

WILLIAM MARSHALL.

William Marshall, one of the most prominent men in Brooklyn, N. Y., died suddenly at his home, 295 Clinton avenue, in that city on June 9. He was sitting at the supper table with his wife and one of his sons, when suddenly he placed his hand over his heart and died without speaking.

Mr. Marshall was born in Belfast, Ireland, in 1813, and when a boy came to this country, his family settling in Wilmington, Del. After remaining there ten years they went to Brooklyn, where, after receiving a common school education, William Marshall entered the employment of John Thursby, cordage manufacturer. When he had mastered the business he became a partner with Lawrence Waterbury, the firm being L. Waterbury & Co., the firm manufacturing cordage and operating a paper mill in Brooklyn. When the Cordage Trust was formed Mr. Marshall sold out to it at his own price, retired from the business, and with James M. Waterbury and his son Chauncey Marshall formed the New York Paper Company, which continued to operate the paper mill. When the Cordage Trust went to smash Mr. Marshall became the sole owner of the paper mill, and so continued up to the day of his death.

Mr. Marshall was one of the original trustees of the New York and Brooklyn Bridge, and at the time of his death was a director in the Mechanics' Bank, National City Bank, First National Bank, and was also a director in the Williamsburgh Fire Insurance Company, the Brooklyn Heights Railroad Company and the Brooklyn and Coney Island Railroad Company. He was one of the original directors of both the last named companies. He was at one time Register of Kings County, and was a member of the Brooklyn Club and of the Society of Old Brooklynites. He leaves a widow, three sons and one daughter.

William C. Sheard, a resident of the Odd Fellows' Home, Philadelphia, Pa., died suddenly on June 7 of apoplexy. He was born in Yorkshire, England, on June 3, 1814, and came to this country in 1833 and settled in Frankford, Pa., where for more than fifty years he was proprietor of a book and stationery store. He had been twice married and leaves three sons.

Henry Mason, publisher, Chelsea, Mass., is dead.

E. E. Alton, publisher, Colton, Wash., is dead.

John C. Parker, of Washington, D. C., has secured the contract for supplying the Treasury Department with toilet paper during the next fiscal year at 5¼ cents per roll for Air Line paper; fixtures free.

Personals.

Fairman Warren, a son of J. S. Warren, of Warren, Fuller & Co., and a director of the National Wall Paper Company, committed suicide at the Sevilla apartment house, New York, where he lived, on Tuesday, by shooting himself in the head. He met with an accident to the knee cap of his right leg some time ago, and suffered great agony from the injury. He was thirty-five years of age and leaves a wife and a two months old baby.

General Notes.

A receiver has been appointed for the Manhattan Publishing Company, of Chicago, Ill. The company was incorporated in 1892, with a capital stock of $40,000, and published a biographical dictionary of prominent financiers of the West.

The Westinghouse Machine Company has issued a brochure entitled "Economy and Guarantees," containing a reprint from the *Engineering Record* on the economy guarantees of engines, with some remarks on the subject by itself. It is worth reading.

Judge Lawrence, in Supreme Court, Chambers, New York, has continued the temporary injunction recently granted by Judge Beach, restraining Robert F. Hobbs from engaging in or becoming associated with any business of manufacturing, buying, selling or dealing in wall paper as principal or employee.

A German scientific journal states that flexible glass is made by dissolving 4 to 8 parts of gun cotton in 1 part of ether or alcohol and adding to this solution 2 to 4 parts of non-resinous oil and 4 to 10 parts of Canada balsam. The mixture is spread on a plate of glass and then dried in a current of air at a temperature of 50°. The residuum is a hard, flexible, transparent mass, resisting acids, alkalies and salts.

The Boston Belting Company has issued two new illustrated catalogues and price lists of rubber goods, one referring to rubber mats, step treads, &c., and the other to mechanical rubber goods, all of its manufacture. These catalogues are nicely printed and are useful as well as interesting.

The Standard Paper Company, Milwaukee, Wis., was awarded on June 4 the contract to furnish the State with paper for two years at an estimated cost of $14,883.43. The H. Neidecken Company, Milwaukee, Wis., was the second lowest bidder at $15,861.42. Two Chicago concerns, the Whiting Paper Company and the Chicago Paper Company, were among the bidders.

Some time ago Walter M. Sparks, of New York, patented a machine for coating both sides of a sheet of paper at the same time. He has been building machines under his patent for actual use, and has been keeping tab on certain people who have been using machines which he claims are infringements on this patent. He has finally brought suit against the Nonotuck Paper Company, Holyoke, Mass., and the case will be tried in Boston during the coming month. With Mr. Sparks' machine both sides of the paper are coated at the one operation, and it is claimed that not only the Nonotuck, but several others in New York, Maine and Massachusetts are infringers on the patent. When the suit is tried some interesting developments are promised.

A new process, notes the New York *Tribune*, is now reported from Neuhausen, Switzerland, one of the few foreign centres of aluminum production. Electrolysis is resorted to, but the particular mineral operated upon is a sulphide. The oxide is first converted into that salt, or rather into a double sulphide of aluminum and some alkaline metals like sodium. This particular combination is effected by heating alumina, carbon and sulphide of sodium together. A bath of potassium and sodium chlorides, melted by an external heat, is found preferable to one of cryolite for this process. It is claimed that less current is required to electrolyze this salt than beauxite, and as the cost of aluminum is really controlled by the cost of the electricity consumed in the operation, even the slightest gain in this respect is highly desirable.

THE "Hamilton" Felt.

"Best and Most Economical Made."

Among the Score

of Felts offered to the trade, the "Hamilton" stands without a peer. Thoroughly reliable, it is sold at the same prices as inferior makes. Lots of Felts, but only one "Hamilton."

In ordering mention kind of stock used, quality of paper made and speed of machine.

Shuler & Benninghofen, Hamilton, Ohio.

The W. S. Tyler Wire Works Co.,

CLEVELAND, OHIO.

MANUFACTURERS OF

FOURDRINIER WIRES,

Cylinder Faces and Washer Wires.

The Van Denbergh Laboratory.

F. P. VAN DENBERGH, B.S., M.D., F.C.S. R. A. WITTHAUS, A.M., M.D. Consulting. ISAAC KEMOR, Ph.D.

CHEMICAL ENGINEERS, ANALYSTS AND INDUSTRIAL CHEMISTS.

Analyses, processes and counsel in sulphite, pulp and paper manufacture. Ten years Chemists to the City of Buffalo, and Professors of Chemistry University of Buffalo.

LABORATORY: Erie County Bank Building, Niagara and Main Sts., BUFFALO, N. Y.

THE GENERAL FIRE EXTINGUISHER COMPANY,

CONTROLLING THE INVENTIONS AND APPARATUS PERTAINING TO AUTOMATIC SPRINKLERS OF

Frederick Grinnell, William Neracher, John Hill, William Kane and others.

INFORMATION AND PROPOSALS FURNISHED AT THE SEVERAL DEPARTMENT AGENCIES, NAMELY:

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CHICAGO: Pullman Building.
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BOSTON: 173 Devonshire Street.
BUFFALO: City Bank Building.
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AND AT THE

EXECUTIVE OFFICES, PROVIDENCE, R. I.

Noble & Johnston Machine Co.,

Aloosick Falls, N. Y.,

Manufacturers of

Paper Mill Machinery.

Jordan & Beating Engines.

Iron or Wood Tubs, Laid or Steel Bars and Knives. Bed Plates and Jordan Fillings of every description a specialty. Correspondence solicited.

HOLLINGSWORTH & WHITNEY CO.,

MANUFACTURERS OF ALL GRADES OF

Manilla Papers AND Pure Fibres.

PROPRIETORS OF

TACONNET PAPER MILLS, WINSLOW, ME.....Product. 40 tons Manilla Paper daily.
AROOSTOOK MILLS, GARDINER, ME.....Product: 8 tons No. 1 Manilla daily.
COBBOSSEE MILLS, GARDINER, ME.....Product: 10 tons No. 1 Manilla daily.
PEQUOSSETTE MILLS, WATERTOWN, MASS.....Product: 12 tons No. 1 Manilla daily.
TACONNET PULP MILLS, WINSLOW, ME.....Product: 50 tons Wood Pulp daily.

Boston Office:
44 FEDERAL STREET.

New York Office:
207 BROADWAY.

Communications.

The Smoke Nuisance and Cheaper Power from Coal.

MONTREAL, June 5, 1895.

Editor of The Paper Trade Journal:

One of the best of the trade journals that I take pleasure in reading is THE PAPER TRADE JOURNAL; it is newsy with respect to the paper trade, amusing in respect to incidents and instructive in respect to technical conditions.

In the last issue, under the head of cheaper power from coal, you discuss the extraction of greater energy by the burning of fuel, an interesting subject, the solving of the smoke nuisance. Perhaps you will find the following comments sufficiently interesting for your readers, who, if even I did not know it, might be called gourmands in science, judging from the style of the reading matter in your excellent paper.

To anyone who has studied this question, as I have, your editorial and every article bearing upon the same question is interesting.

I have given years of time to the study of the matter from a chemical and natural point of view; I have demonstrated successfully the possibilities of perfect combustion—no smoke, no waste, increased steaming power—by tests on steam boilers from 12 horse power up to 300 horse power; in the former with a result so perfect that I have held my head over a smokestack of a locomotive type of boiler, burning soft coal, without soiling my face or linen.

I have had the pleasurable satisfaction of seeing two boilers, each 12 feet in diameter, side by side, each with separate smokestacks and in all respects alike, except that one had my device in the furnace for improving combustion and the other had not.

I have seen those boilers fed with coal at intervals of five minutes, the same quantities put in each furnace (two furnaces to each), the same man attending both boilers with the same care and time to each. I have seen the one making steam faster, leaving nothing in the furnace pan except the earthy non-combustible matter in the coal, giving only white vapor from the chimney, and the other boiler belching out heavy volumes of black smoke.

Prima facie, there is a great deal of money to be made by the owners of steam plants with such improvements, and money to the inventor of such devices, but self-respecting men cannot long persist in spending money in any matter for the public benefit when the moral difficulties are greater than uniting the elements; in other words, one may persist in efforts to overcome mechanical errors and devise means for the union of the gases, but no man will long contend, at his own expense, with hurt to his feelings, against insidious mischief.

You place the blame in respect to smoking chimneys on: 1, the faulty construction of furnaces; 2, the use of inferior coal; 3, the employment of unskilled attendants. I would add to those causes, opinionativeness without knowledge of the elements in attendants; irascibility with corruptibility in too many attendants; penuriousness in the owners of steam plants blind to their losses.

Man may contrive an engine and an attendant may be found to run it and to care for it, but in the burning of coal the elements which support combustion are not visible, and to talk of them to the average fireman or engineer is to be made sport of. Oxygen, hydrogen and carbon are words heard to be forgotten as fast as spoken; carbonic acid as the product of perfect union from carbon and oxygen leaves no form of intelligence in their minds; the vapor from the smokestack, which results from a union of the hydrogen in the coal with the oxygen of the atmosphere, is not suggestive to them.

They may see a blue flame playing over the firebed, clinkers being made in the furnace, smoke going from the chimney, and feel difficulty in making steam, and will then blame the fuel or the boiler; perhaps justly, but certainly in ignorance of the carbonic oxide created by lack of sufficient oxygen or by lowered temperature from an excessive volume of air. These conditions are more frequent than not.

If the owners of such boilers were tendered 680 pounds of coal for a ton, they would not accept delivery; it would be a robbery; yet that is about the difference in resulting value to the owners of steam boilers in so burning coal as to produce carbonic oxide, instead of so burning that the invisible carbonic acid is passed outward to the atmosphere.

"Where ignorance is bliss 'tis folly to be wise." The dollars sent out as smoke or wasted in bad fires, and the dollars lost by the corrosive influence of carbonic oxide are not valued by the manufacturer only because he does not see them. Wastefulness always makes nuisances, and wherever coal is unnaturally burned nuisances are created, to the annoyance of the people in the vicinities of industrial undertakings worked under conditions of impossible union only in part. The people then complain, the courts take up their cry, the press aids the courts and industrial works are menaced as nuisances.

There should be no nuisance from the burning of coal, if burned according to the well established laws of chemistry, which are only the discovery of Nature's laws. There would then be seen the perfect union of the carbon in the fuel with the oxygen of the atmosphere, giving off the invisible carbonic acid to support plant life, and by the union of the hydrogen in the coal with oxygen, water would be produced to nourish vegetation, and the air would be kept pure for the lungs of man and woman to do their work in oxygenizing the blood for the heart's action.

I have had successes and failures in my experiments, the failures not more discouraging than would attach to mismeasurements, and never daunted, but I have felt the discouragement of men of means, who with everything to gain are always looking for gifts, men in authority looking for bribes on pain of death to all effort, and the attendants, following the example of their superiors, saying suggestively with oaths, they can make or mar such things.

An engineer in a position of responsibility in a company, where he was so well thought of that a complaint would be treason, after acknowledged successes and trials, again and again opened a valve which destroyed the work that had been demonstrated a success. He did not at first acknowledge doing so, until in questioning his admissions were made with the seeming simpleton excuses which are so generally excused, until in a spirit of determination to wreck he again closed the valve and destroyed work which the consulting engineer of the company ordered, and the company approved; then with no little bravado, in conversation with one of the engineers of the same company employed on a different boat, that other engineer viewing the work of "dour Mac," said:

"Well, Mac, you have busted it."

"Yes, it is busted."

"I am —— glad of it. Smoke! Why, I don't want to stop smoke; I send smoke and red hot flame out of my chimney 10, 15 and 20 feet high."

"I did that once when I was on the Pearl, but I got —— for it."

I mention this incident only as an example of the difficulties, from a moral point of view, which the student in economies has, perforce of ignorance in the men with whom he comes in contact when trying to do good in banishing smoke by perfect combustion, which is the only solution to the question how to get "cheaper power from coal."

Undoubtedly engineers and owners of steam plants are often disappointed in different contrivances which they are induced to use, but their disappointments are a consequence of their not studying the question; and, strange to say, the more unscientific the device, the more certain its promoter is to succeed, to inveigle the trusting capitalist; I have, however, seen many appliances which would have rendered good services toward perfect combustion, if only men would let them alone, and I have seen some devices, good in principle but faulty in some one particular by reason of the inventor being ignorant of the combining laws and laws of temperature.

Notwithstanding all of the failures, the question is all important.

JOHN LIVINGSTONE.

Awards for Envelopes.

The following awards have been made by the Postmaster General for supplying the various Government departments at Washington with envelopes, both plain and printed:

Bidder 1. The Springfield Envelope Company, Springfield, Mass.

2. Powers Paper Company, Holyoke, Mass.

3. Easton & Rupp, Washington, D. C.

4. The White, Corbin Paper Company, Rockville, Conn.

A, plain; B, printed.

WHITE.

Item 1. 1,615,000 10⅛x4¼ in, 50 lb, A, $1.43, bidder 1; B, $1.48, do.

2. 2,512,000 9⅛x4⅛ in, do, A, $1.19, do; B, $1.24, do.

3. 10,600,000 8⅞x3⅞ in, do, A, $1,10, do; B, $1.15, do.

4. 1,200,000 8⅛x3⅝ in, do, A, 99c, do; B, $1.04, do.

5. 200,000 6½x3⅝ in, do, A, 77c, do; B, 82c, do.

6. 2,530,000 5x3½ in, do, A, 72c, do; B, 77c, do.

7. 700,000 5½x3⅛ in, do, A, 62c, do; B, 67c, do.

CREAM LAID.

8. 15,000 10⅞x4⅞ in, cream laid, highly calendered, No. 1 quality, 60 lb, A, $2 48, bidder 2; B, $2.58, do.

9. 15,000 10⅛x4⅛ in, 70 lb, A, $2.48, do; B, $2.58, do.

10. 25,000 9⅜x4⅛ in, do, 60 lb, A, $2.03; B, $2.13, do.

11. 50,000 8⅞x3⅞ in, do, A, $1.79, do; B, $1.89, do.

12. 25,000 8⅛x3⅝ in, do, A, $1.60, do; B, $1.73, do.

13. 10,000 6¾x3¼ in, do, 60 lb, A, $1.40, do; B, $1.50, do.

14. 300,000 6x3⅛ in, 50 lb, A, 97c, do; B, $1.07, do.

15. 20,000 5½x3¼ in, do, A, 71c, do; B, 81c, do.

AZURE BLUE.

16. 25,000 11½x5 in, 50 lb, A, $2.15, bidder 1; B, $2.25, do.

17. 100,000 9¾x4⅛ in, do, A, $1.40, do; B, $1.45, do.

18. 10,000 8⅞x3⅞ in, do, A, $1.30, do; B, $1.40, do.

19. 75,000 6x3⅝ in, do, A, 77c, do; B, 82c, do.

20. 40,000 5½x3⅛ in, do, A, 70c, do; B, 80c, do.

MISCELLANEOUS.

21. 5,000 7x4⅜ in, Hurd's No 51-9, A, $4.80, bidder 3.

22. 2,000 7x3¾ in, Imperial Irish linen, A, $2.50, do.

23. 5,000 6½x4 in, parchment vellum, A, $2.50, do.

24. 4,000 6¼x4¾ in, Crane's kid finish, A, $6.25, do.

25. 4,000 6¼x3½ in, Crane's No. 29, antique laid, A, $6.65, do.

26. 60,000 6x3½ in, parchment vellum, A, $3.26, do.

27. 25,000 6x3½ in, Crane's Distaff, A, $2.32, $2.35, $4 10 and $4.12, do.

28. 5,000 6x3½ in, Crane's bond, No. 6, laid, A, $1.78 and $4.45, do.

29. 6,000 5¾x4¾ in, parchment vellum, A, $5.94 and $3.02, do.

30. 1,000 5½x4½ in, pure Irish linen, A, $1.92, do.

31. 85,000 5½x3⅝ in, Crane's Distaff, A, $1.92, $3.60, $5.12, do.

32. 15,000 5½x3¼ in, parchment vellum, A, $1.93 and $3.30, do.

33. 10,000 5⅜x4¼ in, Crane's Distaff, A, $2.80 and $5.15, do.

34. 10,000 5⅜x3⅜ in, Whiting standard, 70 lb, A, $2.15 and $3, do.

35. 75,000 5⅛x4 1-16 in, parchment vellum, A, $2.15 and $3.28, do.

36. 40,000 5⅛x4⅛ in, Whiting standard, 70 lb, or equal thereto, white or cream, A, $2.15 and $3, do.

37. 250,000 5⅛x4 1-16 in, Crane's Distaff, $2.15, $4.10 and $4.12, do.

38. 10,000 5⅛x4 1-16 in, Crane's O. S., A, $1.85 and $4.74, do.

39. 10,000 5⅛x4 1-16 in, Crane's antique laid, A, $2.18 and $3.04, do.

40. 50,000 5⅛x4 1-16 in, pure Irish linen, thin, A, $1.50 and $1.90, do.

41. 5,000 4½x2½ in, plain white, 50 lb, A, $3.78, do.

42. 75,000 4½x3¼ in, Crane's Distaff, A, $1.80, $3.60 and $3.82, do.

43. 10,000 4½x3¼ in, Crane's bond, A, $1.82 and $3.74, do.

44. 2,000 4½x3¼ in, Crane's O. S., A, $1.82 and $5.50, do.

45. 2,000 3½x2¼ in, do, A, $1.60 and $4.50, do.

CLOTH LINED.

46. 500 15½x10½ in, A, $35.45, bidder 4; B, $36.45, do.

47. 2,000 15½x9⅞ in, A, $30.45, do.; B, $31.45, do.

48. 5,000 13x8½ in, A, $23.90, do; B, $24.90, do.

49. 2,000 11x9 in, A, $23.30, do; B, $23.30, do.

50. 3,000 10⅞x4⅞ in, A, $12.45, do; B, $13.45, do.

51. 1,000 10½x6 in, A, $15.95, do; B, $16.95, do.

52. 37,000 10½x4⅞ in, A, $12.45, do; B, $13.45, do.

53. 7,000 10x5 in, A, $13.39, do; B, $14.37, do.

54. 2,000 10x4½ in, A, $10.79, do; B, $11.79, do.

55. 1,000 9⅞x6½ in, A, $15.45, do; B, $16.45, do.

56. 60,000 9½x4 in, A, $9.60, do; B, $9.90, do.

57. 10,000 6⅞x4⅞ in, A, $8.70, do; B, $9, do.

58. 12,000 6¼x3½ in, A, $6.62, do; B, $6.92, do.

MANILLA.

59. 10,000 16x10 in, 100 lbs, A, $6.70, bidder 1; B, $7, do.

60. 10,000 15x12 in, do, A, $7.25, do; B, $7.50, do.

61. 25,000 15x11 in, do, A, $6.85, do; B, $7, do.

62. 1,000 15x10 in, do, A, $7, do; B, $8, do.

63. 1,500 15x9 in, do, A, $6.50, do; B, $7.50, do.

64. 56,000 14x10 in, do, A, $6, do; B, $6.15, do.

65. 10,000 14x10 in, 80 lbs, A, $5, do; B, $5.25, do.

66. 1,000,000 13¼x6¼ in, do, A, $3.40 do; B, $3.59, do.

67. 112,000 13x11 in, do, A, $5.10, do; B, $5.25, do.

68. 15,000 13½x8⅞ in, do, A, $4.75, do; B, $5, do.

69. 5,000 12¾x10¼ in, do, A, $5.25, do; B, $5.50, do.

70. 50,000 12½x9 in, 100 lbs, A, $5.07, do; B, $5.25, do.

71. 25,000 12½x9 in, 60 lbs, A, $3.40, do; B, $3.60, do.

72. 175 000 12½x5½ in, do, A, $2.55, do; B, $2.75, do.

73. 3,000 12x10½ in, 50 lbs, A, $4, do; B, $4.50, do.

74. 20,000 12x10 in, do, A, $3.50, do; B, $3.70, do.

75. 125,000 12x9½ in, do, A, $2.89, do; B, $3, do.

76. 15,000 12x9⅛ in, Tension patent, 60 lbs, A and B, no bids.

77. 2,000 12x9 in, open end do, A, $4, bidder 1; B, $4.50, do.

78. 600,000 12x8 in, 80 lbs, A, $3.62, do; B, $3.75, do.

79. 10,000 12x8 in, 60 lbs, A, $3.25, do; B, $3.50, do.

80. 240 000 11½x8½ in, do, A, $2.99, do; B, $3.10, do.

81. 20,000 11½x7½ in, 80 lbs, A, $3.55, do; B, $3.75, do.

82. 500,000 11½x4½ in, 50 lbs, A, $1.42, do; B, $1.52, do.

83. 15,000 11¼x7⅛ in, 100 lbs, A, $4.25, do; B, $4.50, do.

84. 50,000 11x9 in, 60 lbs, A, $2.70, bidder 4; B, $2.90, do.

85. 103,000 11x8 in, do, A, $2.77, bidder 1; B, $2.90, do.

86. 5,000 11x7½ in, 50 lbs, A, $3, do; B, $3.50, do.

87. 65,000 11x5 in, do, A, $1.63, bidder 4; B, $1.73, do.

88. 3,000 10½x7½ in, open end do, A, $3, bidder 1; B, $3.50, do.

89. 170,000 10½x7 in, 60 lbs, A, $2.51, do; B, $2.70, do.

90. 5,600,000 10½x6½ in, 40 lbs., A, $1.36, do; B, $1.50, do.

91. 7,000 10½x5½ in, 50 lbs, A, $2.25, do; B, $2.75, do.

92. 5,000 10¼x6½ in, do, A, $1.98, bidder 4; B, $2.48, do.

93. 25,000 10⅛x4½ in, ungummed, 80 lbs, A, $1.70, bidder 1; B, $1,90, do.

94. 13,000 10¼x8¼ in, 60 lbs, A, $3, do; B, $3.20, do.

95. 315,000 10¼x4½ in, 40 lbs, A, $1.04, do; B, $1.14, do.

96. 1,060,000 10x6½ in, open end, do, A, $1.75, bidder 4; B, $1.85, do.

97. 5,000 10x5 in, double fold, 80 lbs, A, $4, bidder 1; B, $4.50, do.

98. 10,000 10x5 in, Bishop's patent square lap, ungummed, do, A and B, no bids.

99. 50,000 9½x6½ in, 100 lbs, A, $3.35, bidder 1; B, $3.50, do.

100. 204,000 9½x5¼ in, 50 lbs, A, $1.90, do; B, $2, do.

101. 10,000 9¾x4½ in, 80 lbs, A, $1.04, bidder 4; B, $1.44, do.

102. 50,000 9½x4½ in, ungummed, 60 lbs, A, $1.15, bidder 1; B, $1.25, do.

103. 720,000 9½x4½ in, 40 lbs, A, 88c., do; B, 93c, do.

104. 450,000 9⅜x4⅛ in, 36 lbs, A, 82c, do; B, 87c, do.

105. 158,000 8⅞x3⅞ in, 60 lbs, A, $1.03, do; B, $1.13, do.

106. 25,000 8⅞x3⅞ in, ungummed, do, A, $1 03, do; B, $1.13, do.

107. 450,000 8⅞x3⅞ in, 28 lbs, A, 60c, do; B, 78c, do.

108. 60,000 8¼x4¼ in, rope, Bishop's patent, ungummed, 50 lbs, A and B, no bids.

109. 10,000 8¼x4¼ in, Bishop's patent, square lap, ungummed, 80 lbs, A and B, no bids.

110. 100,000 8⅜x3⅜ in, ungummed, 50 lbs, A, 84c, bidder 1; B, 94c, do.

111. 500,000 8⅜x3⅜ in, 36 lbs, A, 78c, do; B, 78c, do.

112. 1,700,000 6¼x3¼ in, 28 lbs, A, 55c, do; B, 60c, do.

113. 10,000 6x3½ in, do, A, 50c, do; B, 75c, do.

114. 100,000 5¼x3½ in, open end, 80 lbs, A, 94c, do; B, $1.04, do.

115. 100,000 5¼x4 in, open end, ungummed, do, A, $1.85, do; B, $2, do.

116. 80,000 5 7-16x3 3-16 in, 28 lbs, A, 42c, do; B, 50c, do.

117. 50,000 4⅜x2⅝ in, 40 lbs, A, 43c, do; B, 53c, do.

118. 50,000 4½x2½ in, Gold Pay, square lap, 36 lbs, A, 50c, do; B, 60c, do.

119. 25,000 4⅜x2½ in, open end, 50 lbs, A, 50c, do; B, 66c, do.

120. 25,000 2x2 in, do, A, $1.25, do; B, $1.50, do.

All the weights of paper given in the foregoing schedules and based on size 22½x30 in—500 sheets to the ream.

An Electrolytic Process.

In the annual report on alkali, &c., works, the following is contributed by Edward Jackson, of Birmingham, under the heading of "Chlorine Works:"

In addition to the Weldon and Pechiney chlorine processes in operation in the district, a new plant, around which a great amount of interest centres, has been erected at the works of the Aluminium Company, at Oldbury, for the manufacture of caustic soda and chlorine electrolytically from brine by Castner's patents. Practically pure caustic soda is produced, and chlorine of 95 to 97 per cent. purity obtained, which is free from hypochlorites, the remainder being hydrogen.

The main features of Mr. Castner's process may be thus briefly described as being the use of a moving body of mercury, which completely separates and so prevents any recombination of the products of the electrolysis. It also supersedes the use of a diaphragm, the sodium amalgam formed being decomposed at once. The cell is rocked so as to give motion to the mercury. As will be realized, the necessary movement to keep the mercury in motion is very slight. The actual movement of the cells is communicated by eccentrics fixed on a long shaft, so as to cause the cells to rise and fall ⅛ of an inch above and below the level twice a minute. The movement is quite sufficient to cause the mercury to flow completely from side to side. There are three compartments in the cell; the two outside ones contain the salt solution with the carbons, the middle compartment contains an iron cathode and the caustic solution. The salt solution circulates continuously, and is being continually electrolyzed. The chlorine escapes by a suitable pipe from each cell to the main leading to the absorbers. The sodium amalgam introduced is decomposed when it reaches the middle portion of the cell, and the caustic solution flows away by a suitable pipe. A known quantity of water is admitted from time to time, which causes the caustic solution to overflow.

The cells are connected in series, and mains run along the side of the cells to convey away the different products and bring the brine to be decomposed. As the whole rocking movement is so very slight, by making a short bend in the branch pipe to each cell from the mains it amply provides for rigid cell connections. There is no difficulty in keeping all the cell covers and pipe connections gas tight. The house in which the cells are placed has up to the present been found singularly free from local chlorine escapes. The process is continuous and automatic. As no hypochlorites are formed, there is not the decrease in electrical efficiency, as has been the case in some previous electrolytic processes, when these compounds have been produced, and so the wear on the carbon anodes, which are specially prepared, is very slight. Some of the carbons have been in use now over three months and there is hardly any appreciable depreciation.

Each cell is 6 feet long by 3 feet wide by 6 inches deep, decomposes 36½ pounds salt daily and contains 180 pounds of mercury.

Thirty cells, worked in two series of fifteen, have now been erected, and twenty-eight are in regular work, two being always kept in readiness in case of a necessary stoppage and disconnection for cleaning of one in the series, which has to be done once in three weeks. Prior to this fourteen cells only were in use.

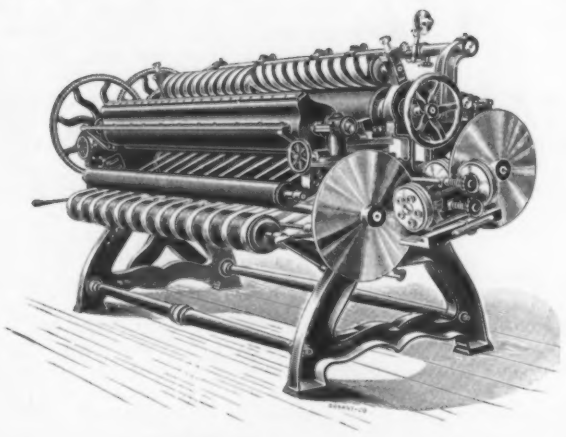
The thirty cell plant produces 1,200 pounds pure caustic soda per twenty-four hours and a corresponding quantity of chlorine. At present the chlorine is being used for the manufacture of potassium chlorate.

Mr. Castner informs me that increased experience with the working of the enlarged plant has fully confirmed all previous figures that have been made public as to the process.

Through the courtesy of the managers of the company I am enabled to give the following information and figures concerning the process up to the present date:

"During the time it has been in work about 34 tons of caustic soda have been produced, testing 78.9 Liverpool test. The plant was started in sections, and worked intermittently at first, in order to accustom the men to the new work, so that later periods are more favorable for observation. During ninety-one days' continuous running of fourteen cells, with an expenditure of 4,540 indicated horse power, there was produced 23.5 tons caustic. This corresponds to 33.67 tons pure salt decomposed, and an evolution of 20.4 tons chlorine. The foregoing is equal to an average daily expenditure of 49.9 indicated horse power, and each indicated horse power decomposed daily 16.6 pounds pure dry salt—18.8 pounds of ordinary salt. No attempt was made to measure the actual amount of chlorine given off, although for convenience this was converted into potassium chlorate; but as dry salt is electrolyzed only, and the solution flowing through the cells remains the same during the whole time, it is evident that the chlorine can be easily determined with certainty. As to the loss of mercury, this is very slight, and our observations convince us that now the men have got into the work, and in continuous running, the loss will not exceed our original estimate of 5 per cent. per annum."—*Paper Trade Review, London.*

Reduce the back pressure on the engine as much as possible, as every pound of it means more coal to run the engine.



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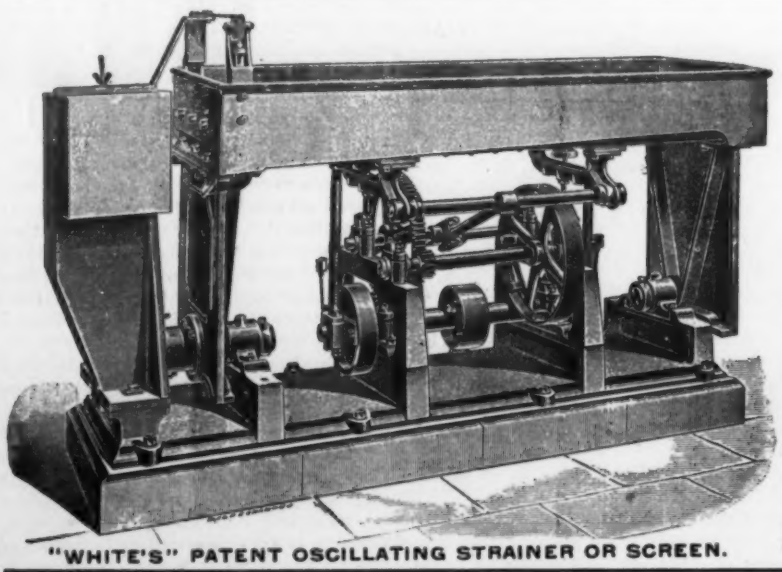

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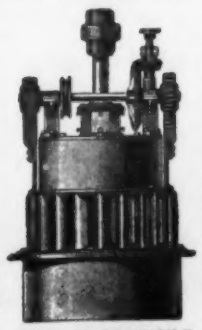

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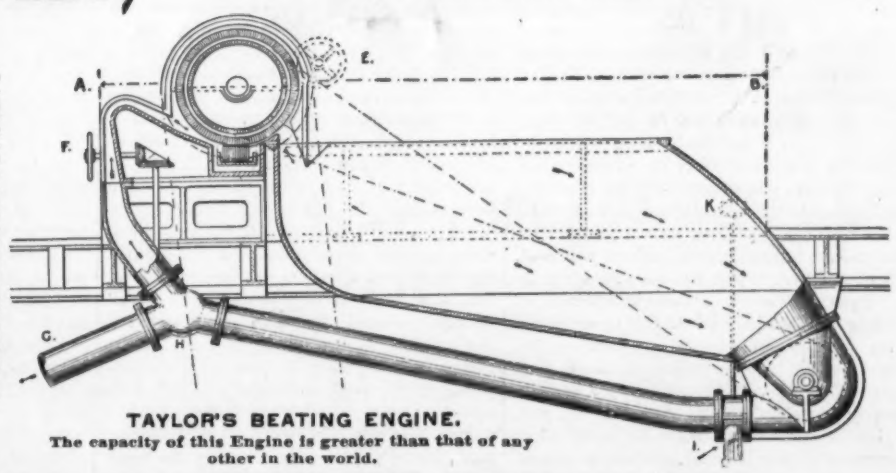

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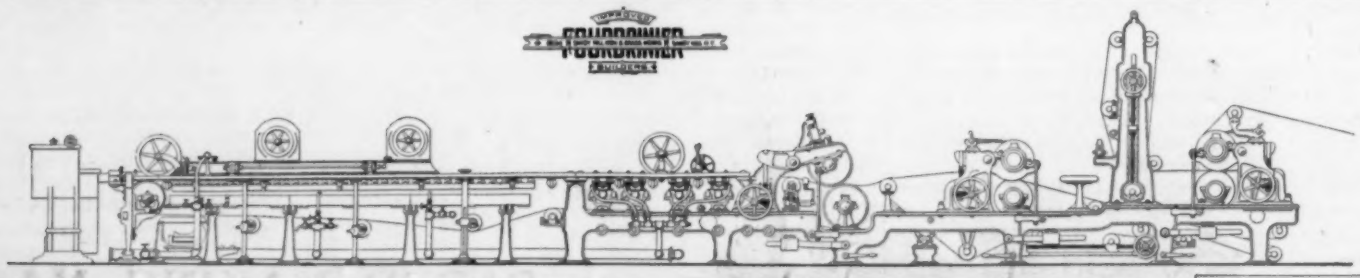

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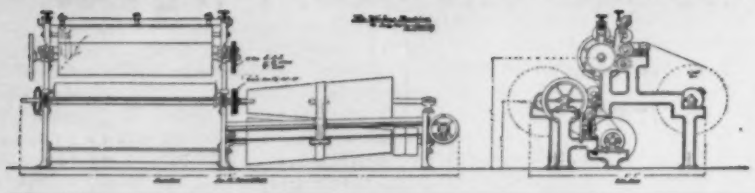

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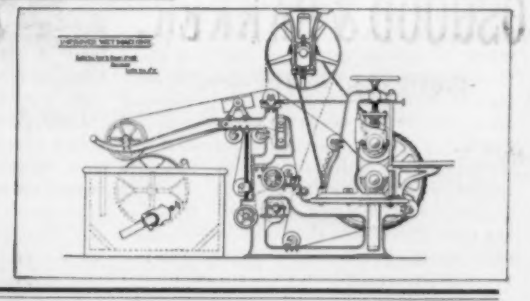

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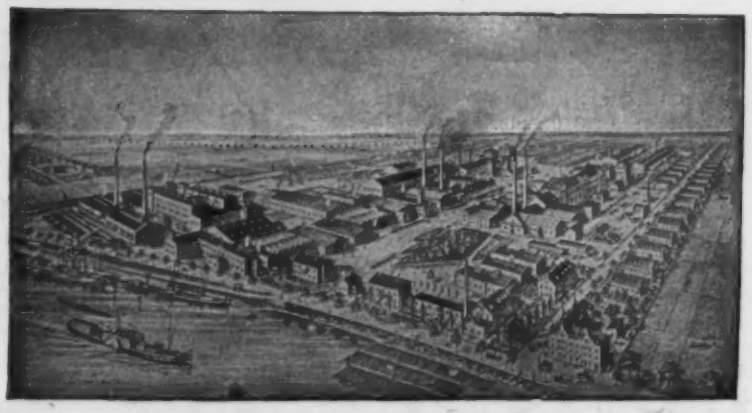

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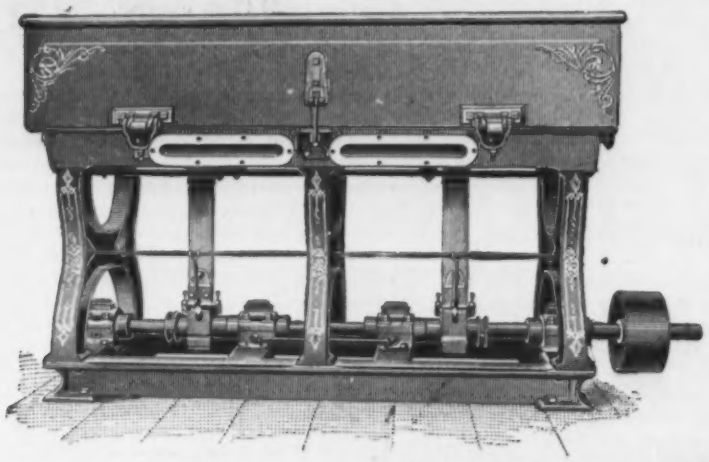

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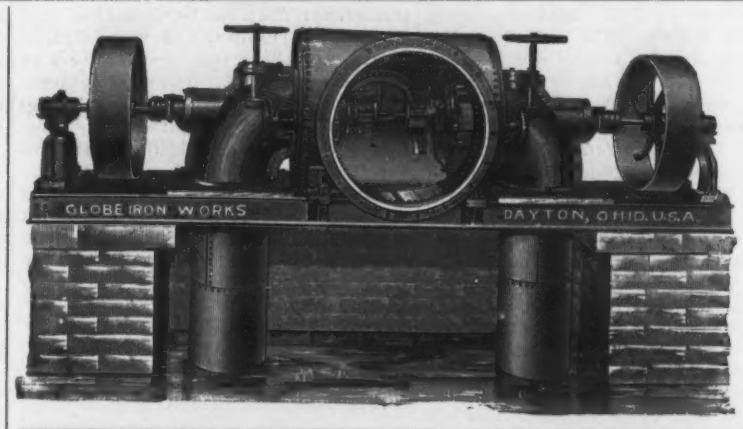

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		Head.	Rev. per Min.	Cu. Ft. per Sec.	Horse Power.	Per Cent.		Head.	Rev. per Min.	Cu. Ft. per Sec.	Horse Power.	Per Cent.
Whole Gate,		16.06	119.17	141.58	205.27	79.76	Whole Gate,	16.33	128.00	134.18	190.56	80.50
¾	"	16.42	122.00	127.18	195.19	82.58	¾	16.56	134.80	120.85	188.14	83.09
½	"	16.78	117.33	112.60	175.74	82.18	½	16.59	129.33	104.85	162.89	82.77
⅜	"	17.03	111.33	98.12	149.99	79.81	⅜	17.18	125.25	92.76	142.40	79.21
¼	"	16.88	118.67	82.07	118.40	75.52	¼	17.48	121.00	70.80	98.85	70.60

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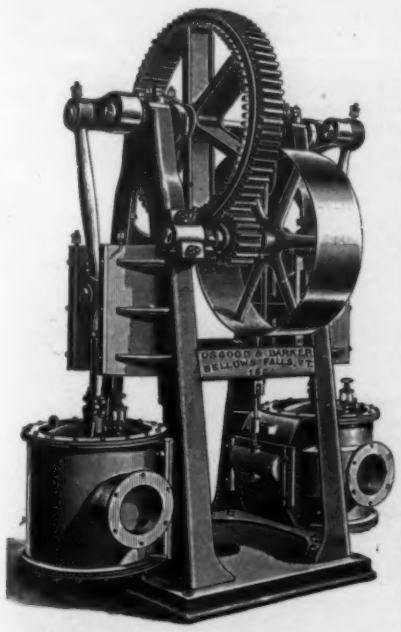

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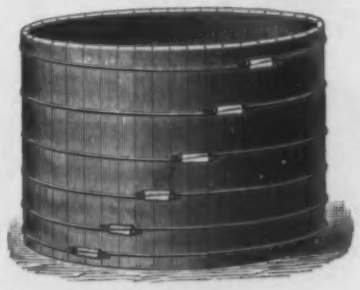

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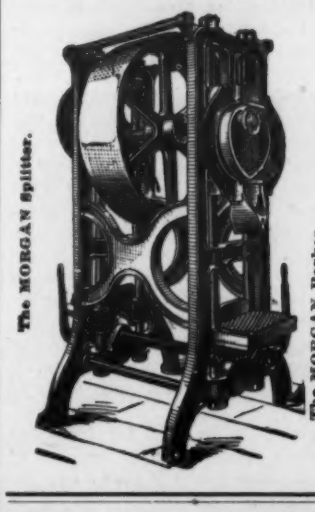
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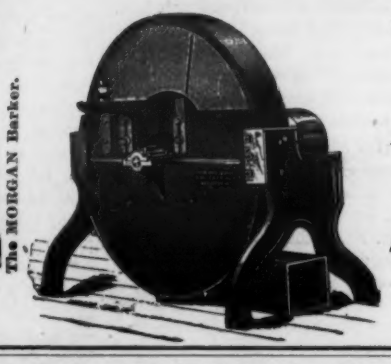
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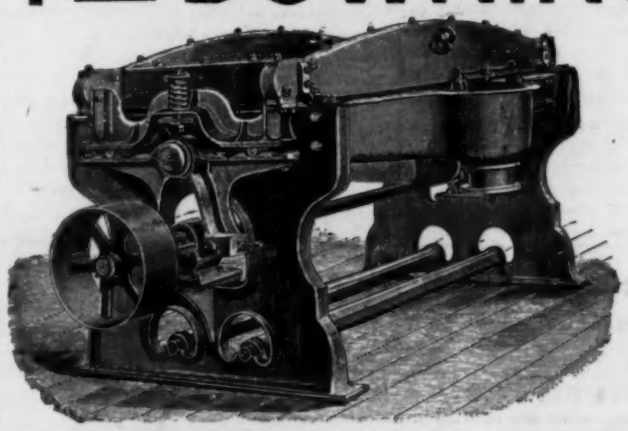

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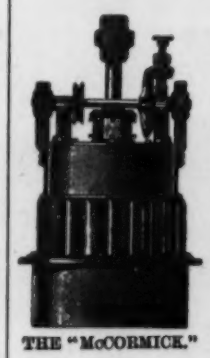
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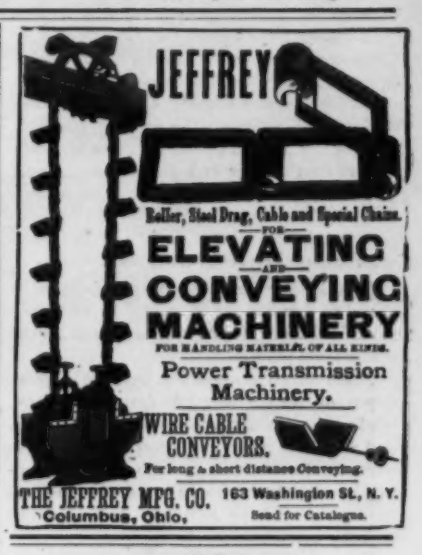

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Instructions to Boiler Attendants.

The Manchester Steam Users' Association of England has issued a revised edition of its "Instructions to Boiler Attendants."

In forwarding these instructions to its members, the association says:

"These instructions have been drawn up with much care, it being desired to make them as complete and educational as possible. There are so many points affecting the safety and proper treatment of boilers, that it was found impossible to compress the instructions into a small space. In boiler and engine rooms, height of wall space is more generally available than width, and, therefore, the sheet was made long and narrow, rather than short and wide. If hung up so as to be about 2 feet from the floor, it can easily be read from top to bottom.

"It is desirable that the sheet should be mounted, and the best plan of doing this will perhaps be to have a board about three-quarters of an inch thick built in three or four widths and stiffened by a batten at each end, the joints being grooved and tongued. On this board the sheet might be pasted, and varnished for preservation. In most cases it might be well to have this done by a bookbinder.

"When mounted, the sheet should be placed in a good light, and where the boiler attendants can have convenient access to it. They should be encouraged to study and master its contents. Much of the information contained therein will be of service daily, and not merely on the occurence of an emergency."

Getting Up Steam.—Warm the boiler gradually. Do not get up steam from cold water in less than six hours. If possible light the fires over night.

Nothing turns a new boiler into an old one sooner than getting up steam too quickly. It hogs the furnace tubes, leads to grooving, strains the end plates and sometimes rips the ring seams of rivets at the bottom of the shell. It is a good plan to blow steam into the cold water at the bottom of the boiler, or to open the blow-out tap and draw the hot water down from the top.

Firing.—Fire regularly. After firing open the ventilating grid in the door for a minute or so. Keep the bars covered right up to the bridge. Keep as thick a fire as quantity of coal will allow. Do not rouse the fire with a rake. Should the coal cake together, run a slicer in on top of the bars, and gently break up the burning mass.

Repeated trials have shown that under ordinarily fair conditions no smoke need be made with careful hand firing. Alternate side firing is very simple and very efficacious.

Cleaning Fires and Slacking Ashes.—Clean the fires as often as the clinkers render it necessary. Clean one side at a time, so as not to make smoke. Do not slake the clinkers and ashes on the flooring plates in front of the boiler, but draw them directly into an iron barrow and wheel them away.

Slaking ashes on the flooring plates corrodes the front of the boiler at the flat end plate, and also at the bottom of the shell where resting on front cross wall.

Feed Water Supply.—Set the feed valve so as to give a constant supply, and keep the water up to the height indicated by the water level pointer.

There is no economy in keeping a great depth of water over the furnace crowns, while the steam space is reduced thereby, and thus the boiler rendered more liable to prime. Nor is there any economy in keeping a very little water over the furnace crowns, while the furnaces are rendered thereby more liable to be laid bare.

Glass Water Gauges and Floats.—Blow through the test tap at the bottom of the gauge hourly, as well as through the tap in the bottom neck, and the tap in the top neck twice daily. These taps should be blown through more frequently when the water is sedimentary and whenever the movement of the water in the glass is at all sluggish. Should either of the thoroughfares become choked clean them out with a wire. Work the floats up and down by hand three or four times a day to see that they are quite free. Always test the glass water gauges and the floats thoroughly the first thing in the morning before firing up, and at the commencement of every shift.

It does not follow that there is plenty of water in the boiler because there is plenty of water in the gauge glass. The passages may be choked. Also, empty gauge glasses are sometimes mistaken for full ones, and explosions have resulted therefrom. Hence the importance of blowing through the test taps frequently.

Blow-out Taps and Scum Taps.—Open the blow-out taps in the morning before the engine is started and at dinner-time when the engine is at rest. Open the scum tap when the engine is running, before breakfast, before dinner and after dinner. If the water is sedimentary, run down half an inch of water at each blowing. If not sedimentary, merely turn the taps round. See that the water is at the height indicated by the water-level pointer at the time of opening the scum tap. Do not neglect blowing out for a single day, even though anti-incrustation compositions are put into the boiler.

Water should be blown from the bottom of the boiler when steam is not being drawn off, so that the water may be at rest and the sediment have an opportunity of settling. Water should be blown from the surface when steam is being drawn off, so that the water may be in ebullition and the scum on the top. If the water be below the pointer, the scum tap will blow steam; if above the pointer, the scummer will miss the scum.

Safety Valves.—Lift each safety valve by hand in the morning before setting to work, to see that it is free. If there is a low water safety valve, test it occasionally by lowering the water level to see that the valve begins to blow at the right point. When the boiler is laid off, examine the float and levers and see that they are free, and that they give the valve the full rise.

If the safety valves are allowed to go to sleep they may get set fast.

Opening Drain Taps and Steam Pipes.—If the boiler is one of a range, and the branch steam pipe between the junction valve and the main steam pipe is so constructed as to allow water to lodge therein, open the drain tap immediately the boiler is laid off, and keep it open until the boiler is set to work again. If the main steam pipe is so constructed as to allow water to lodge therein, open the drain tap immediately the engine is shut down, and keep it open till the engine is set to work again.

If the water is allowed to lodge in the pipes, it is impossible to blow it out under steam pressure without danger. Attempting to do this frequently sets up a water-hammer action within the pipes, and from this cause several explosions have occurred. The only safe plan is not to let the lodgment occur, or to shut off the steam before opening the drain taps.

Shortness of Water.—If the boiler is found to be short of water throw open the fire doors, lower the dampers, ease the safety valves, and set the engine going, if at rest, so as to reduce the pressure. If the boiler is one of a series, shut down the junction valve. If there is reason to conclude that the water has not sunk below the level of the furnace crowns, and they show no signs of distress, turn on the feed and either draw the fires quickly, beginning at the front, or smother them with ashes or anything ready to hand. If there is reason to conclude that the water has sunk below the level of the furnace crowns, withdraw, and leave the safety valves blowing. Warn the passersby from the front.

Easing the Safety Valve.—If either the construction of the boiler or the character of the feed water is such as to render the boiler liable to prime the safety valve should be eased gently.

Turning on the Feed.—From experiments the association has conducted it appears that this is the best thing to do in nearly every case, especially where the feed is introduced behind the fire-bridge, as it would tend to restore the water level, and at the same time to cool and reinvigorate the furnace plates. While, however, the experiments showed that showering cold water onto red-hot furnace crowns would not, as has been generally supposed, lead to a sudden and violent generation of steam which the safety valves could not control and the shell could not resist, it is thought that if the furnace crowns were very hot and just on the point of giving away the generation of a few additional pounds of steam might turn the scale and lead to a collapse. Thus it might be wise to turn on the feed in some cases and not in others, according to the extent to which the furnaces were overheated, and this it is difficult to ascertain. Under these circumstances a hard and fast rule, applicable to all cases, cannot be laid down, and therefore, having regard to the safety of the fireman, the advice to turn on the feed, as a general rule, is confined to those cases where the water has not sunk below the level of the furnace ground.

Drawing the Fires.—This ought not to be attempted if the furnace crowns have begun to bulge out of shape.

It is an extremely responsible task to give any recommendation with regard to the treatment of a boiler when short of water and working under steam pressure that shall be applicable to every case under every variety of circumstance. A boiler attendant has no right to neglect his water supply and allow it to run short; nor has he a right to charge the fires without making sure that the furnace crowns are covered. Should he neglect these simple precautions it is impossible to put matters right without some risk being run. A boiler with hot fires and with furnace crowns short of water is a dangerous instrument to deal with, and the attendant who has done the wrong must bear the risk. The best advice the association can give the boiler attendants on this subject is, do not let shortness of water occur. Keep a sharp lookout on the water gauge.

Use of Anti-Incrustation Compositions.—Do not use any of these without the consent of the association. If used, never introduce them in heavy charges at the manhole or safety valve, but in small daily quantities along with the feed water.

Many furnace crowns have been overheated and bulged out of shape through the use of anti-incrustation compositions, and in some cases explosions have resulted.

Emptying the Boiler.—Do not empty the boiler under steam pressure, but cool it down with the water in; then open the blow-out tap and let the water pour out. To quicken the cooling the damper may be left open and the steam blown off through the safety valves. Do not on any account dash cold water on the hot plates. But in case of an emergency pour cold water in before the hot water is let out, and mix the two together so as to cool the boiler down generally and not locally.

If a boiler is blown off under steam pressure the plates and brickwork are left hot. The hot plates harden the scale and the hot brick hurts the boiler. Cold water dashed onto hot plates will cause severe straining by local contraction, sometimes sufficient to fracture the seams.

Cleaning Out the Boiler.—Clean out the boiler at least every two months, and oftener if the water is sedimentary. Remove all the scale and sediment as well as the flue dust and soot. Show the scale and sediment to the manager. Pass through the flues, and see not only that all the soot and flue dust has been removed, but that the plates have been well brushed. Also see whether the flues are damp or dry, and if damp find out the cause. Further, see through the thoroughfares in the glass water gauges and in the blow-out elbow pipe, as well as the thoroughfares and the perforations in the internal feed dispersion pipe and the scum pipe are free. Take the feed pipe and scum troughs out of the boiler if necessary to clean them thoroughly. Take the taps, if not asbestos packed, and the feed valve to pieces—examine, clean and grease them, and, if necessary, grind them in with a little sand. Examine the fusible plugs.

All taps, whether asbestos packed, or metal to metal, should be followed in working, especially when new. The gland should be screwed down as found necessary so as to keep the plug down to its work; otherwise, it may rise, let the water pass, and become scored.

Preparation for Entire Examination.—Cool the boiler and carefully clean it out as explained above, and also dry it well internally. When the inspector comes, show him both scale and sediment as well as the old cap of the fusible plug, and tell him of any defects that manifested themselves in working, and of any repairs or alterations that have been made since the last examination.

Unless a boiler is suitably prepared, a satisfactory entire examination cannot be made. Inspectors are sent at considerable expense to make entire examinations, and it is a great disappointment when their visits are wasted for want of preparation.

Precautions as to Entering Boiler.—Before getting inside the boiler, if it is one of a series, take off the junction valve hand wheel, and if the blow-out tap is connected to a common waste pipe make sure that the tap is shut and the key in safe keeping.

From the neglect of these precautions men working inside boilers have been fatally scalded.

Fusible Plugs.—Keep these free from soot on the fire side and from incrustation on the water side. Change the fusible metal once every year, at the time of preparing for the association annual entire examination.

If fusible plugs are allowed to become incrusted, or if the metal be worked too long, they become useless, and many furnace crowns have been rent from shortness of water, even though fitted with fusible plugs.

General Keeping of Boiler.—Polish up the brass and other bright work in the fittings. Sweep up the flooring plate frequently. Keep ashes and water out of the hearth pit below the flooring plates. Keep the space on the top of the boiler free, and brush it down once or twice a week. Take a pleasure in keeping the boiler and the boiler house clean and bright and in preventing smoke.—*The Safety Valve.*

Something About Engines.

It is somewhat surprising to note the way in which the large majority of engines are bought and sold. As a rule, no special degree of efficiency is warranted by the builder when he sells a machine of this kind, for the simple reason that none is required by the purchaser. The latter wants an engine of a stated power, and the former furnishes one that he says will fill the bill.

The bargain is closed, and many times the purchaser never makes an effort to find out whether the engine has developed as much power as its builder claimed that it was capable of, or not. If it happens to get the name of being an economical engine, everybody wonders how it can be run with such a small amount of coal, and if it happens to get the name of being wasteful of steam, everybody wonders how its owner can buy coal enough to run it, and it frequently happens that it gets a good or bad name through some trivial circumstance, for no test of any kind has ever been made to determine it.

An engine may be sold for 125 horse power when it should not have been rated above 90, because that is all that it can develop economically and prove durable. If an engine builder simply guarantees an engine to be capable of developing a certain power, and the engine does it, he has fulfilled his contract even if it is very wasteful of fuel at that power, although it may be economical with a lighter load. When the above statement is made it is not always understood, for sometimes it is confounded with the idea that it takes a good deal of coal to develop a large amount of power, and but little for a small amount; but this is not what we mean. If an engine is made to develop all the power that it is capable of developing, it may require 4 pounds of coal per hour for each horse power called for, but if the load is reduced within economical limits, the amount of coal may be reduced to 3.5 pounds per horse power per hour. If the load is quite light then it may require 4 pounds again, from which we see that an engine should be adapted to its load, or else the best results must not be expected.

A certain man wanted an engine to develop a stated amount of power, and wrote to several engine builders asking their prices for such a machine, and being greatly surprised at the difference in the prices quoted, began to investigate as to the cause; and, to use his own words, "it was speed that he was paying for and not size." In other words, a firm could build a small sized engine for a low price, then run it at a high rate of speed and call it a large engine. It is quite evident that the firm who bid for the job with the expectation of building a machine large enough so that it could be run at a reasonable rate of speed could not compete with the before mentioned parties.

But even if an engine is large enough to do its work well, it does not always follow that it will prove economical, and even if it is an economical machine, it may not run so as to give the engineer in charge full satisfaction, and this is an important consideration, although it is apparently sometimes overlooked.

It is true that in some specifications you will find that the machine is to run in a satisfactory manner; but what does that mean? And where are we to draw the line between the approved and the condemned? If the engineer reports that the engine is not satisfactory, he may discover that it has already been accepted and paid for by his employers; for this has happened more than once, and will probably happen more than once more.

Some proprietors seem to think that if it is painted up in good and tasty style and runs without much noise it is satisfactory as a matter of course, and if the engineer does not complain at once about something they will pay the bill, not knowing, or at least not considering, that the said engineer does not care to condemn some of the parts which do not work just right until he has made an effort or efforts to make them work properly, for if he is hasty in the matter some employee of the builder may set the matter right to the discredit of the engineer.

Again, some of the parts may show signs of early failure, and the engineer may want time to try them further before making his report.

So far in this talk we have not taken into consideration that class of employers who are all sufficient in themselves, positively decline to consult with their engineers, and will not listen when advice is offered. We sometimes wonder what such men hire engineers for anyway. Perhaps it is because they wish to appear dignified in the eyes of other employers and steam users. Just for a moment consider the inconsistency of hiring an engineer, nominally putting him in charge of several thousand dollars worth of machinery, and when he reports that one of his lubricators will not work in a satisfactory manner and that the valve seats and cylinders are in danger of being destroyed, or at least badly cut up for want of lubrication, of simply telling him that it has worked before and that it must now, and this when the whole expenditure involved is less than $30.

But an engine may develop all the power required and do it cheaply also, still at the same time it may be noisy to run and unsteady on its foundation. It will always be a nuisance to run and everybody concerned knows it, but still it is kept and perhaps the purchaser of it makes the manufacturer deduct something from his bill, still this does not benefit the engineer in the least. Of course, it is a great job to take out an engine after it is once erected and started up, but many a man has found that it would have proved cheaper in the end if he had removed the unsatisfactory machine at once, rather than to have tried to run it at much unnecessary expense for several years and then have been obliged to take it out at last.

While in conversation with a man who was about to equip a shop, he stated his preference for a certain kind of engine, and on inquiry as to his reasons, he replied that he had seen one of them running, and it was so noiseless and free from jar and vibration that if two pins were placed on the frame with their points together in the form of a letter V, they would remain in that position for half a day.

In another case the chief engineer of a large plant said that he had a small engine running at a high rate of speed, which was so nicely balanced that he could set a silver quarter of a dollar on its edge on it and it would not be thrown down by the vibration.

These are probably exceptional cases, but they are not impossibilities, but show to what a degree of perfection the art of engine building has been brought. Such work as this is worthy of all commendation, and a firm who can and will produce it for a reasonable price, other things being equal, should have a plenty to do at all times of the year.—*Power and Transmission.*

When fitting up a steam plant provision should always be made for more than one boiler feeder. If only one is furnished and some trivial accident disables that one the cost entailed by even a short shut down will more than cover the cost of a reserve pump or injector.

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Economy of Power House Operation.

By J. B. Craven.

"Economy of Power House Operation" has been so often and so thoroughly discussed that I do not know that I can say much that is new on the subject, and yet it is one which must ever come up before the management of a street railway system. Starting from the boiler room we come at once to the place where in most cases the greatest waste will be found. It has been said that the waste due to improper firing is often of greater consequence than any other loss which is produced in the operating of a steam plant. There are two causes for this: first, poor construction of the boiler; secondly, poor firing and lack of care at the boilers. Most of us think that any man can fire a boiler, and while looking with awe and wonder at the engine and generator, forget that all the power comes from the coal pile, and pay little attention as to the economy in transmitting that power from the coal to the engine. No greater mistake is made than to place the care of boilers in incompetent hands, for they require the highest degree of care, conscientiousness and constant attention.

The fireman must be ever on the watch to see that the water is kept at the proper level, to keep an even steam pressure, and to show by his steam, coal and water records that he is getting just as good cards as the engineer can show by the manipulation of the steam he uses in his engine. He must see that the fires are spread evenly over the grates and are of an even thickness, that the proper amount of air is admitted into the furnace to obtain good combustion.

If you could realize how easily from 1 to 20 per cent. of coal can be shoveled into the furnace and up the chimney without generating any more power, you would see how essential it is to have something more than mere machines shoveling coal into a furnace. Another point of importance is to see that boilers are kept clean and free from scale, which is simply the result of improper attention.

If for a moment you will stop and think that in the construction of the boiler the maker has reduced the thickness of the tubes as much as possible consistent with safety, and then look at a tube with from one-eighth to one-half an inch of scale on it, you will at once see how great the loss must be transmitting the heat through this scale; not only that, but it leaves the iron exposed to the effects of the heat without the proper circulation of water back of it, which causes rapid deterioration, and in some cases is liable to cause an explosion. I have used quite a number of boiler compounds for the prevention of scale, but have found the best to be plain coal oil. We have used it in Buffalo for the past two years with success, putting about 1 pint a day into each boiler and letting it enter with the feed water by means of a sight feed lubricator. However, no one remedy will fill all cases, and each must be the subject of some experiment.

Another source of loss comes from insufficiently covered boilers and pipes. See that all exposed parts, that possibly can be, are covered with some good non-conducting material, and prevent as much as possible radiation and condensation. The steam pipes should be kept tight and all leaks followed up at once and stopped, and in this way have as little loss as possible between the boilers and engines. See that the piping is well drained, so that water will not carry over the cylinder of the engine. This is accomplished by separators placed as near to the engine as possible, and the water thus separated is returned to the boilers. In a good many cases this water is allowed to go to waste; if this is found to be the case it should be remedied, as this water is separated at a very high temperature, and requires very little heat to turn it again into steam. Before entering the engine room I would like to say something on the subject of feed water heaters. If your engines are running non-condensing, the question is very easily settled.

As, however, the majority of steam plants are run condensing, other factors are brought in. In the power house of the Buffalo Railway Company one-seventh of the engine capacity is run high pressure. In this way, taking the feed water from the hot well at an initial temperature of 110°, and passing it through two heaters in the exhaust line of the high-pressure system, we get a final temperature of 194° before the water enters the boilers. It is claimed by some that this method of taking the water from the hot well is not right, on account of the oil to be found in this water. But so small a portion of the hot well water is used that the amount of oil in it is small, and by this method we do away with secondary heaters in the exhaust line between the engine and condenser, and not only save in the first cost, but I think obtain slightly better results. However, one thing is important, whatever means are used to heat the feed water it should be done, for not only will there be a great saving in fuel, but the straining of the boilers due to putting cold water in will be done away with.

Passing from the boiler room we come to the engines and generators, and the types seen here will be many and varied, from the high speed, belt driven machine to the slow speed, direct connected machine of large units. As you all know, the tendency of late has inclined to the use of the latter type. In my mind there is no doubt of the efficiency of the direct connected unit over the belted one. It is evident to all that where space is valuable it has the advantage of taking up less room. It can be thrown in and out of service with as much rapidity as the belt driven machine; there is a saving of from 1½ to 3 per cent. due to the slipping of belts, very little in itself, but when figured up at the end of a year in a plant of any size will amount to considerable.

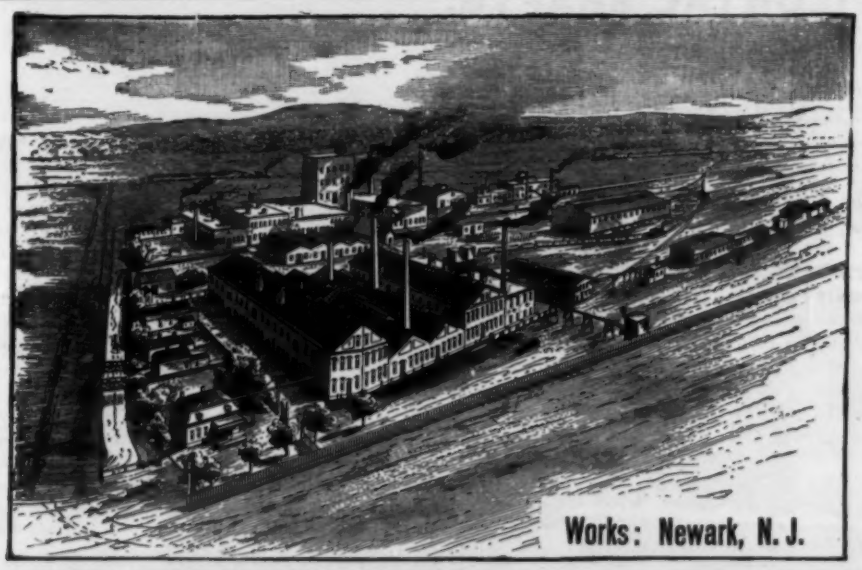
Added to this there is the saving in labor and the decreased expense due to wear and tear, as this item is less in slow speed than high speed machinery. For the above reasons I have drawn the conclusion that direct connected units are more economical than high speed ones. Regarding the size of units used, it depends entirely on the output of the plant. I would advocate as large as possible, yet not so large that the breaking down of one would cripple the output. However, in plants that have not these latest types of machines great saving may be made in the operating of the engines.

In many cases, after the constructing engineer has left, engines are ofttimes supposed to look after themselves, those in charge simply supplying them with steam and oil. What I said in reference to the man in charge of the boiler room applies with equal force here. Put a thoroughly competent man in charge, and you will find it a paying investment. Intelligence and experience are the best safeguards and the real insurance against accidents. Fifty dollars a month more to a capable engineer will probably be repaid a hundred times by the care taken and the high state of efficiency at which the machinery is kept. In such a state an engine is a reliable piece of mechanism. If neglected it is liable to fail at any time, causing delays and worries, and not only adding to the expense in the cost of repairs, but a loss in the receipts outside.

A capable engineer will see that his engines are indicated at least once a month, to see that the valves are properly set, and so keep the steam consumption down to a minimum. All pounding, knocking and leaks should be followed up and remedied at once, and the engines kept in such a state as at all times to be ready to perform the severest services exacted from them. Always keep the load as near the normal capacity of the engines as possible, as engines at that point are most economical; besides you will have fewer machines in service, and thus save the oil supply. Here I will say a little on the subject of oil, as I think quite a saving may be made at this point. In fact I have had one engineer use $640 worth of oil more in six months than another engineer used in the same time, and the engine capacity was increased during the time the last man was in charge.

The lowest priced oil is not always the cheapest; some oils will go much farther than others, and the question of what to use should be settled only by careful examination. After being used once it can be filtered and used again on the lighter parts of the machinery. If rags are used for wiping instead of waste, they can be washed and used again, and the grease and oil extracted will be found useful in some part of the system. By washing the rags 80 per cent. can be saved over what the cost would be if only used once and thrown away. Coming to the generator, we find a machine that is usually well made and efficient. Keep it dry and thoroughly clean, and have the commutator kept as smooth as possible.

The principal trouble will be found in the sparking of the brushes and the heating of the armature and the field coils. The causes of these troubles are too many to enter into here, but on the appearance of trouble the machine should be stopped as soon as possible, for the old maxim "A stitch in time saves nine" can be applied here. Keep the minor electrical apparatus in a station. Everything, such as switches, connections and all instruments, should be kept clean and in working order, especially in the case of lightning arresters, as they may be the means of saving an armature.
—*Manufacturers' Gazette.*



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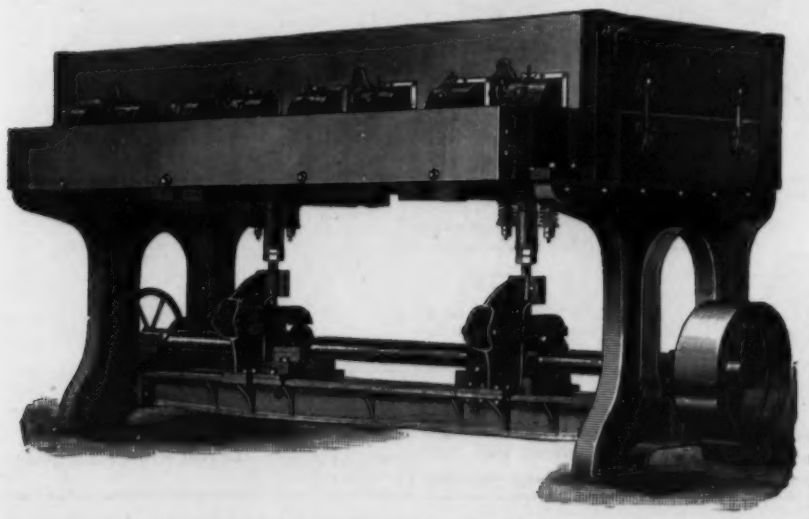

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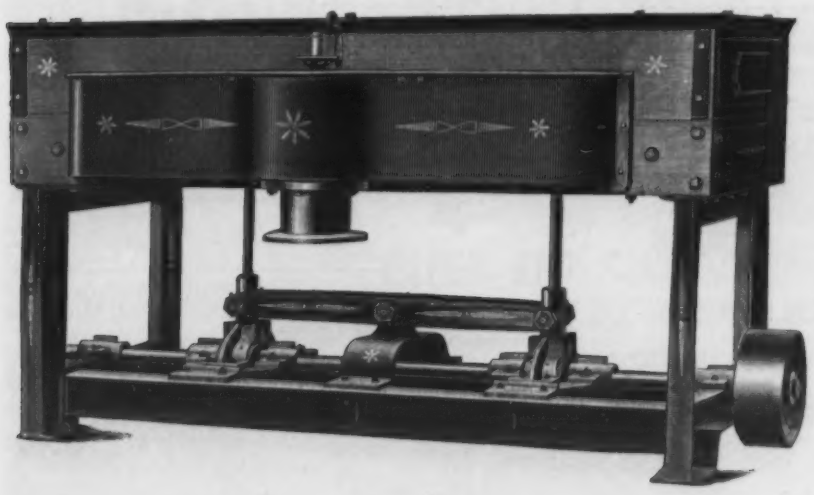

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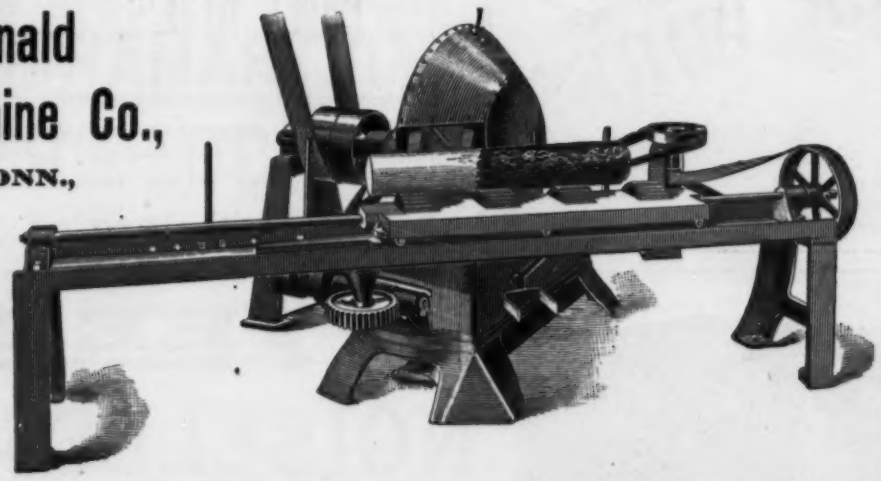

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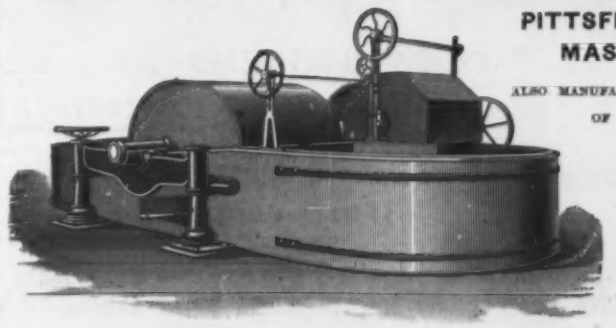

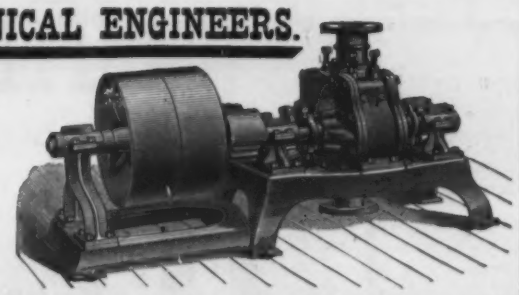

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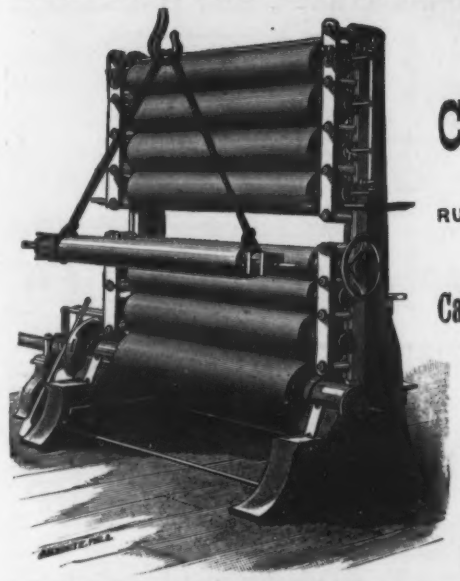

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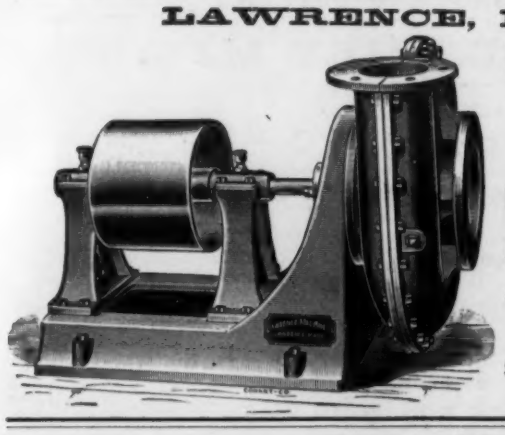

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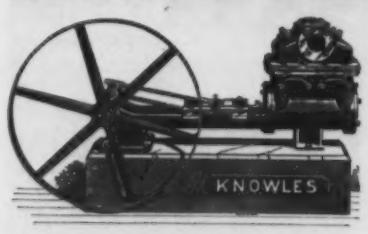

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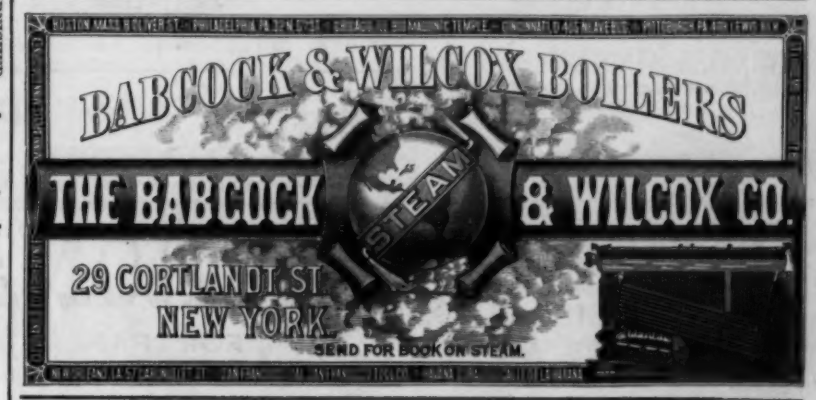

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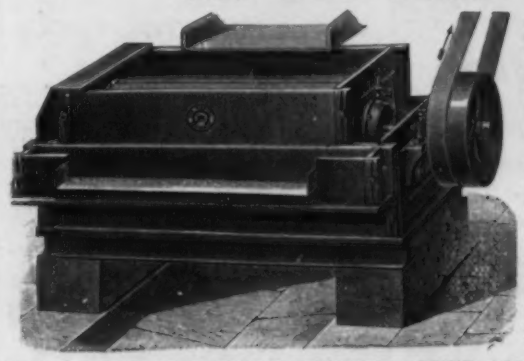

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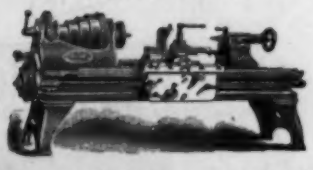

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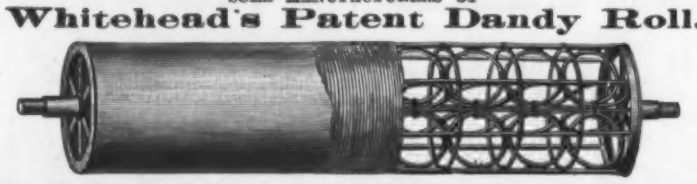

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